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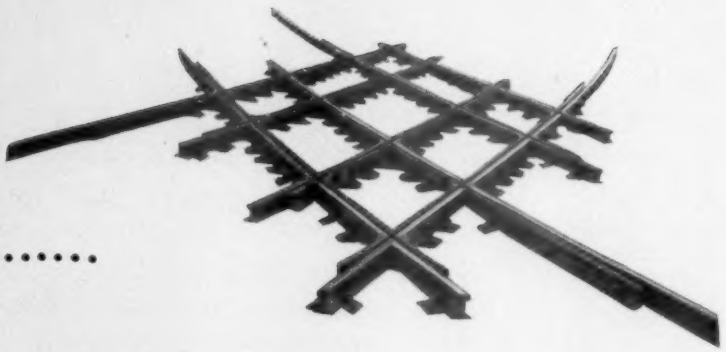
Track Layout assembled at Hadfields Ltd., before despatch to British Railways. Fabricated from Rolled "Era" Manganese Steel rails of 109 lb. F.B. section, this junction has an overall length of 310 ft. x 30 ft. width.



Layout for British Railways comprising one nest of 16 cast "Era" Manganese Steel Single Intersection leg crossings, rail section 109 lb. F.B. Depth of castings 6¼". Approx. overall dimensions 240 ft. x 60 ft.

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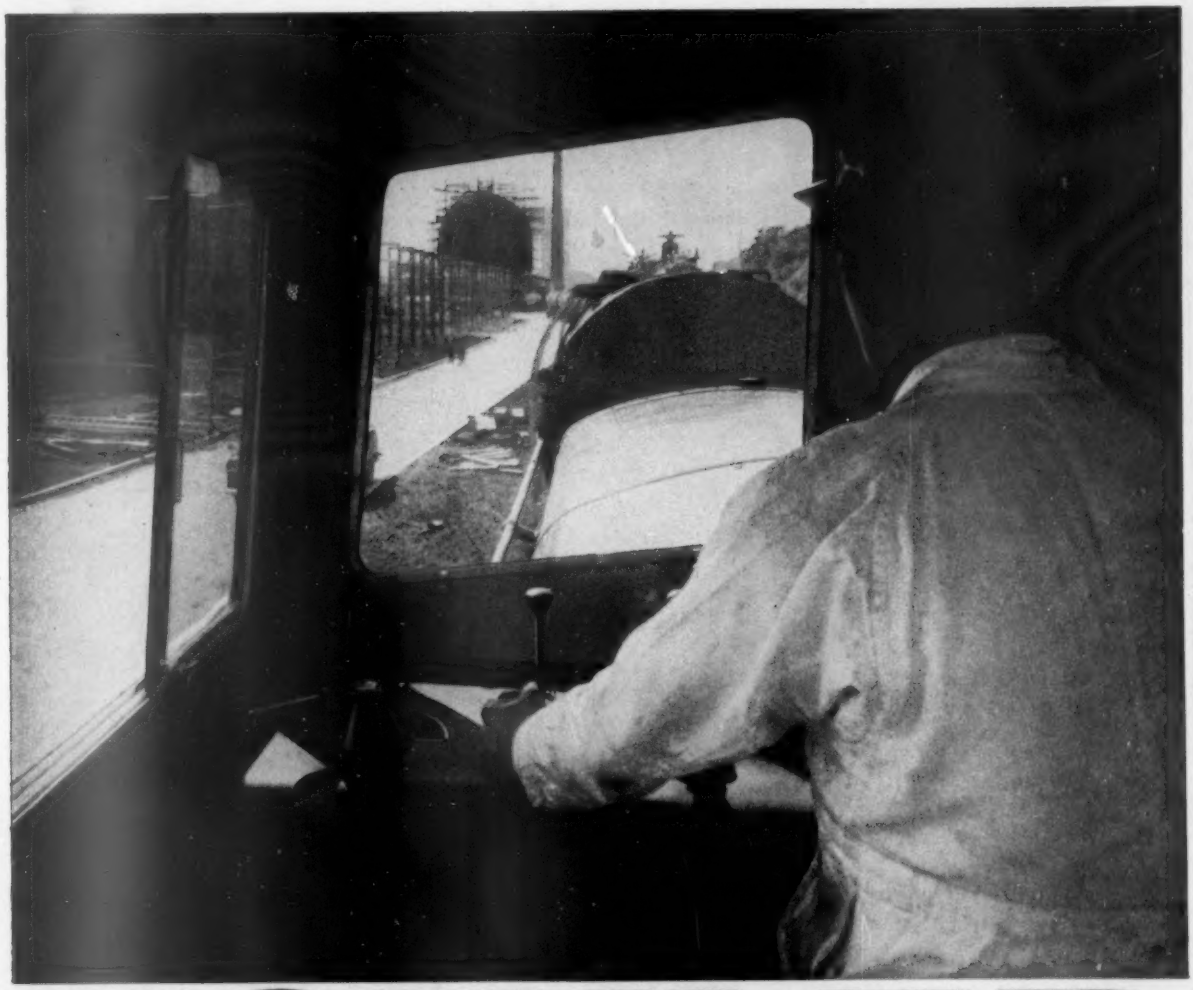

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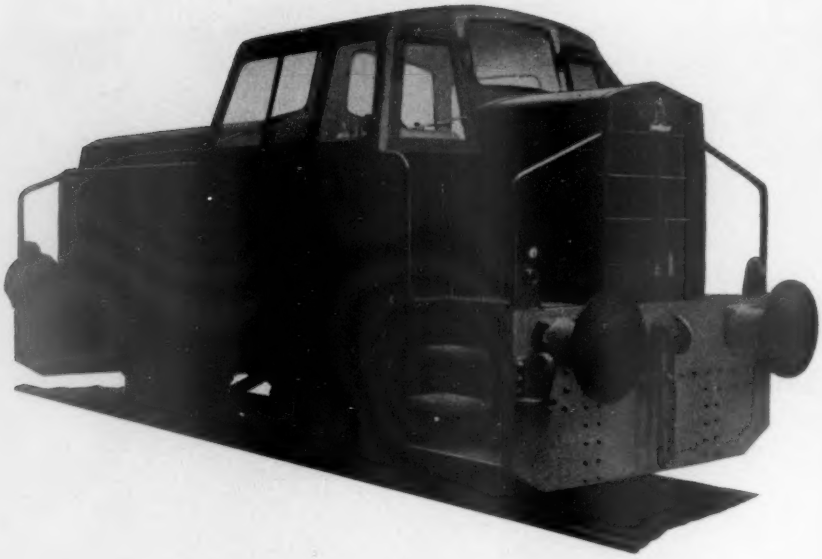

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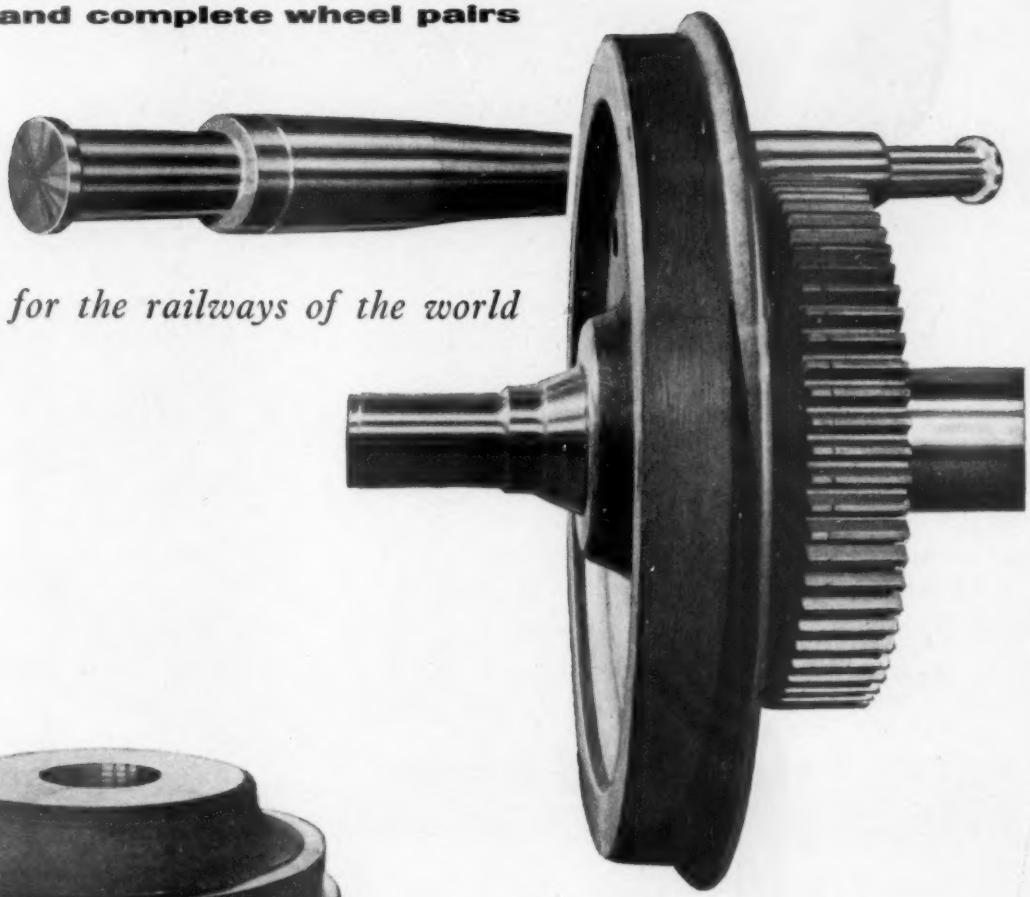

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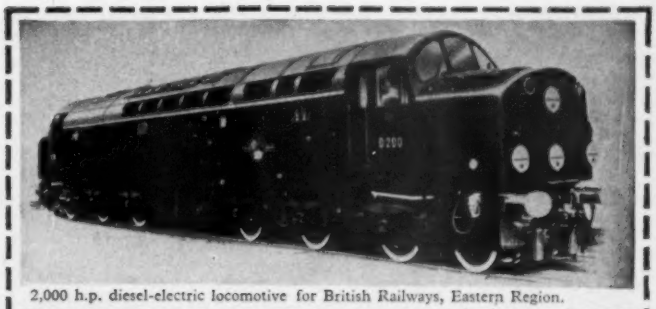
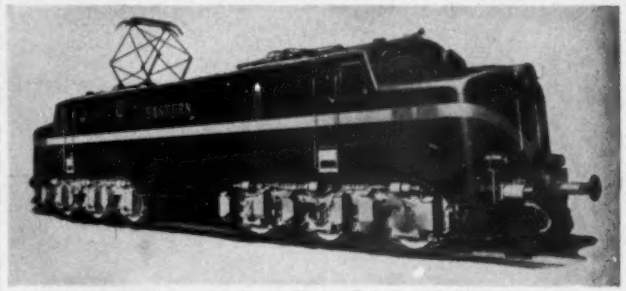
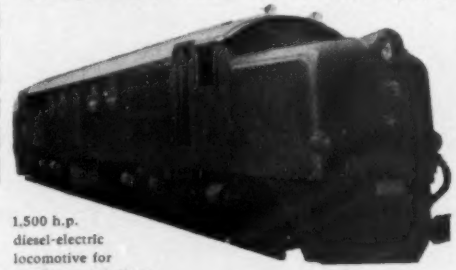


2,000 h.p. diesel-electric locomotive for British Railways, Eastern Region.

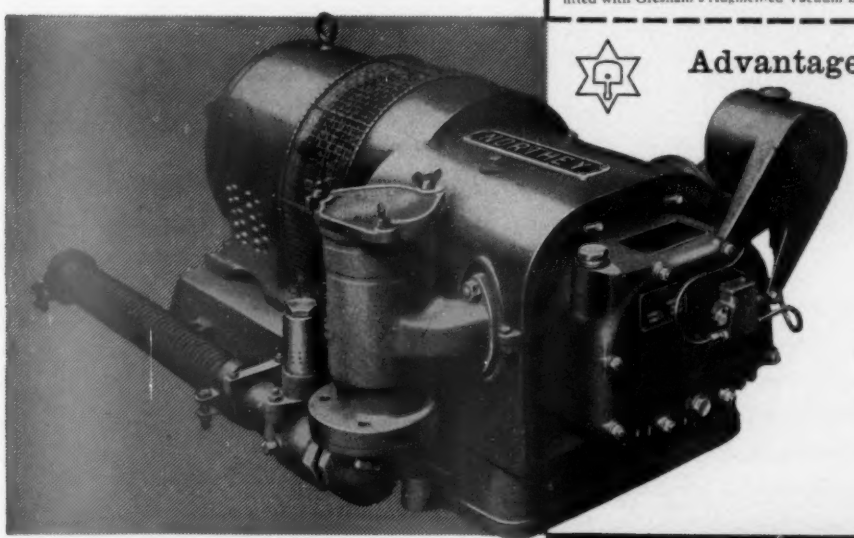


3,000 h.p. electric locomotive for the Eastern Railway of India.



1,500 h.p. diesel-electric locomotive for the Malayan Railway, fitted with Gresham's Augmented Vacuum Brake System for locomotive braking.

Acknowledgments to The English Electric Company Ltd; British Railways, Eastern Region; Eastern Railway of India and Malayan State Railway.



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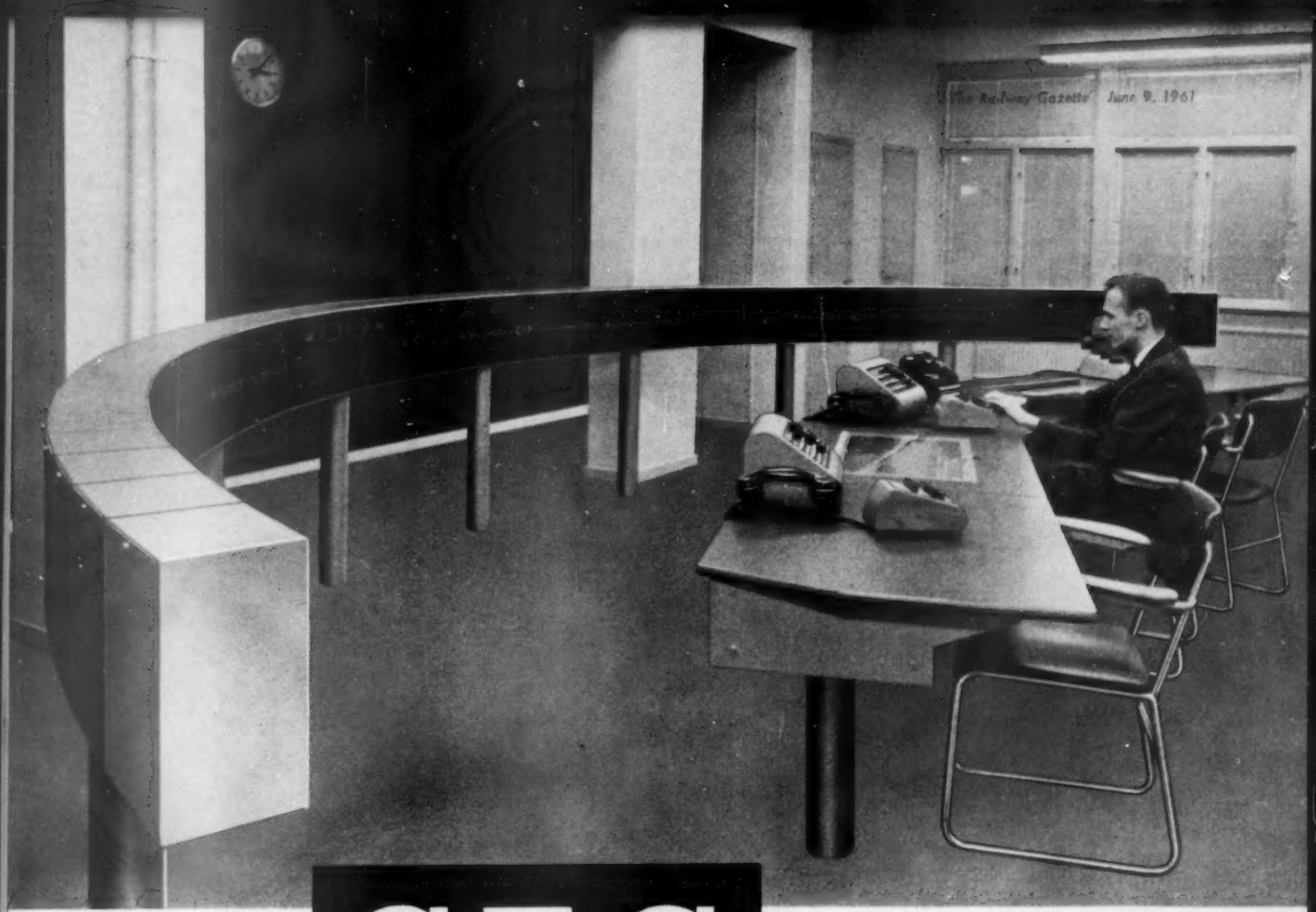

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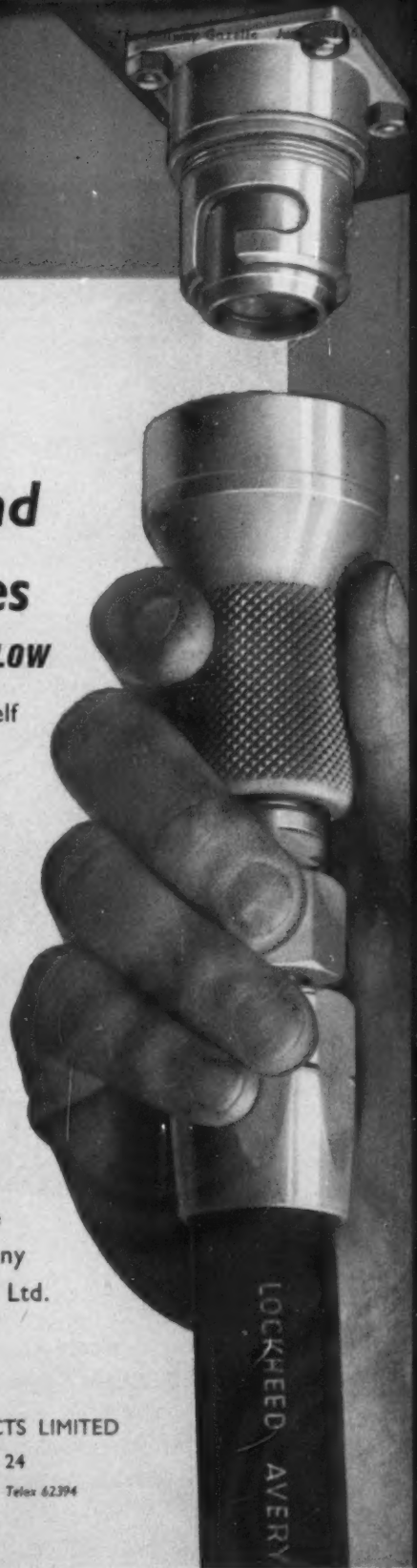

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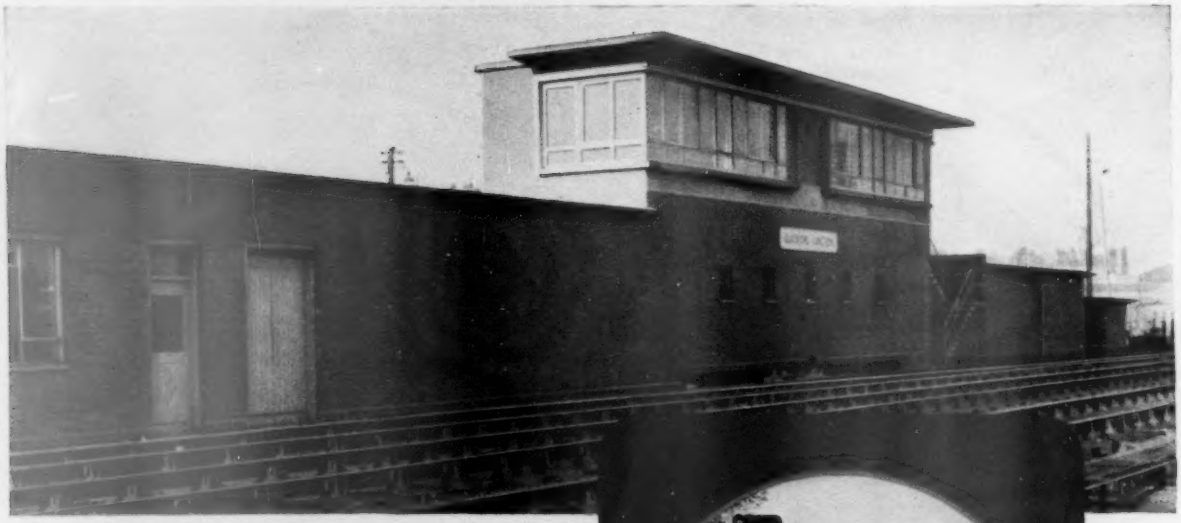
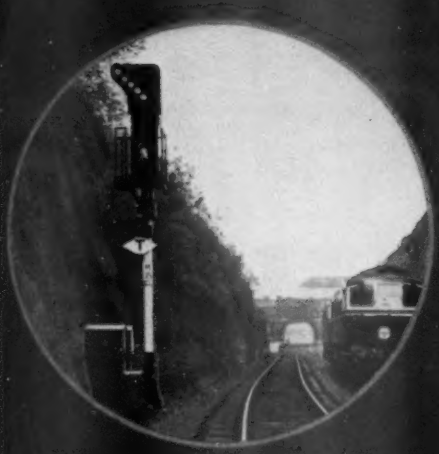


Slateford Signal Box

SGE RE-SIGNALLING
FOR SCOTTISH REGION

1 NEW ELECTRO-MECHANICAL SIGNAL BOX AND 2 EXISTING ONES RE-EQUIPPED, NOW DO THE WORK OF 5 MECHANICAL BOXES

The Slateford-Craiglockhart re-signalling scheme by S.G.E. brought into use at the end of last year, involves a new double-track connecting line between the suburban circle line of the former North British Railway at Craiglockhart, and the main line of the former Caledonian Railway at Slateford, all within the City of Edinburgh. The work includes complete track circuiting on the lines involved, together with 24 colour light signals and 25 sets of motor operated points. 1 new electro-mechanical signal box, and 2 existing signal boxes equipped with combined signal control and illuminated diagram panels of the suspended type, do the work previously requiring 5 mechanical signal boxes.



Signals at the approach to Craiglockhart Station

Relay room at Kingsknowe

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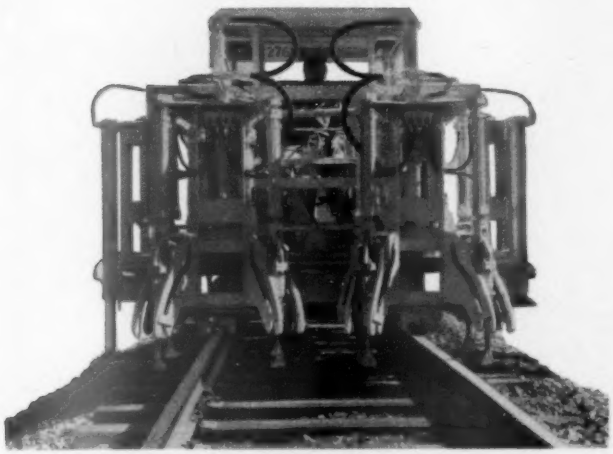

- ★ Each moving head fitted with four pneumatic tools.
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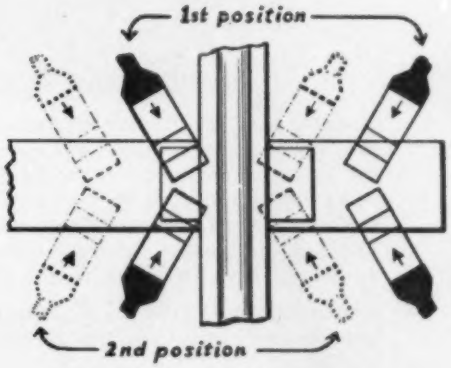

- ★ *Travel speeds up to 20 m.p.h. with hydraulic motor.*
- ★ *Production tamping about 20 seconds per sleeper.*
- ★ *Rapid removal from track possible, utilising hydraulic centre lift.*

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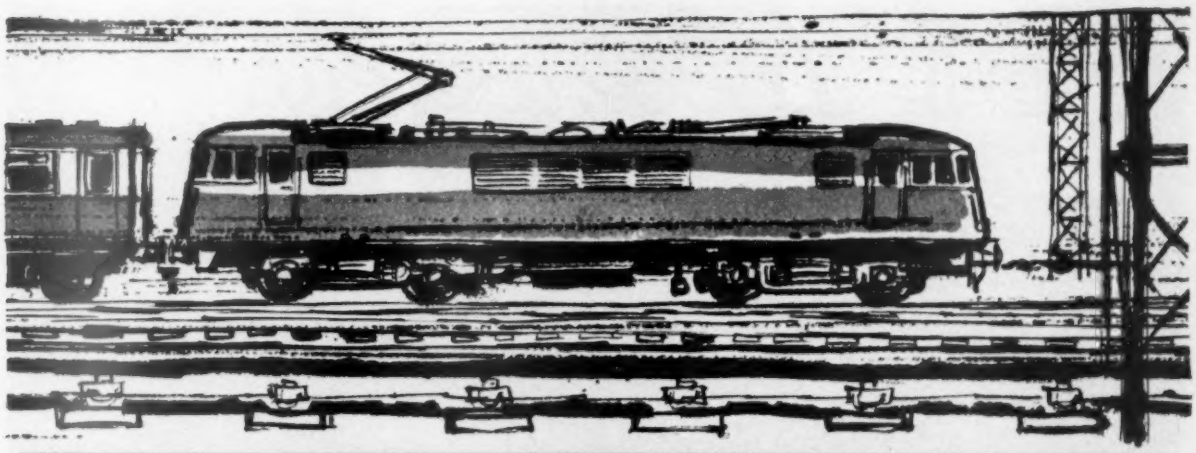

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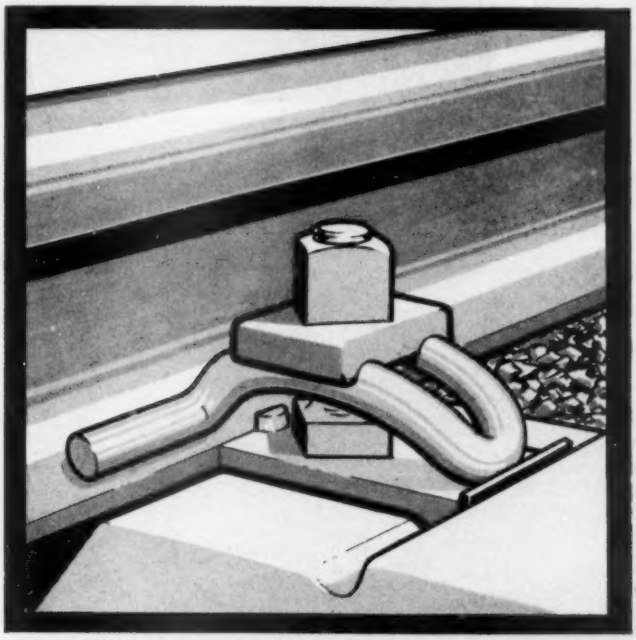

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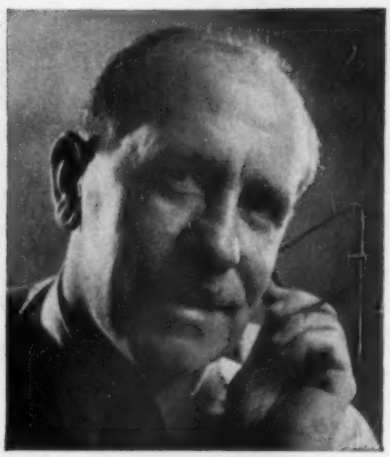

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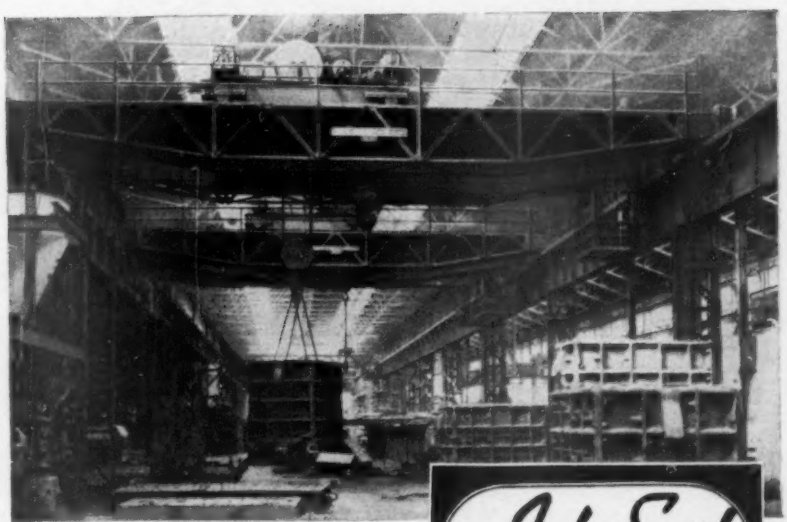

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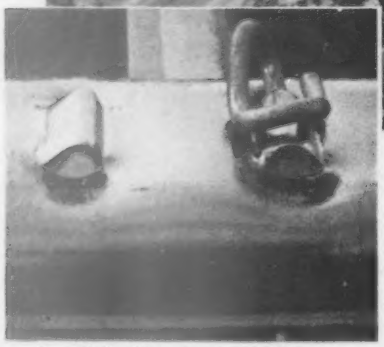
THE PANDROL RAIL FASTENING

Rehabilitation of old steel sleepers, reproduced by courtesy of the Chief Engineer, Nigerian Railway Corporation.



Pressed shoulders on new steel sleepers.

The Pandrol Clip.

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A journal of Management, Engineering and Operation

VOL 114 FRIDAY JUNE 9 1961 No. 23

CONTENTS

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Dr. Beeching takes over

DR. RICHARD BEECHING, new Chairman of the British Transport Commission, and the Chairman-elect of the British Railways Board, which is still to be formed, took over formally at 222 Marylebone Road on Thursday last week. His first action, on assuming the chairmanship, was to hold a meeting with his headquarters staff and to explain the general principles which he was adopting in tackling his new responsibilities. Much that he had to say was reassuring and was designed to allay any apprehension which might have been felt, and which indeed had been engendered by loose talk in one or two popular newspapers, of such things as "the Beeching axe." Indeed, it is believed he made it clear that opportunities for railwaymen of ability will be greater rather than less. During the same day, Dr. Beeching also had similar talks with the officers of one of the London railway regions, and on the next day, June 2, he met the officers of two other regions in London. On Monday, after a meeting with the remaining London region he went to Scotland and met the staff of the Scottish Region on Tuesday morning before going to York to a meeting with the North Eastern Region on Tuesday afternoon. In advance of these meetings, Dr. Beeching had addressed a short personal message to members of the staff. There can be no doubt that this initial approach to what must prove an extraordinarily difficult problem, not only of organisation but of administration, has had a favourable reaction on the railways. The new Chairman has shown himself to be a warm and approachable personality, anxious to come to grips with the basic problems which are inherent in his appointment. At this stage it would be ridiculous to form any assessment of the prospects of success he may have in achieving the major objective of viability for British Railways. What can be said, even at this early stage, is that he has shown an early appreciation of the need to take steps to improve the morale of British Railway officers, to encourage them in the belief of a successful culmination of any future plans which may be propounded for the welfare of British Railways, and, in general, to "show the flag." Probably it can be said that his initial steps have been in the right direction, and one can only wish him well in the enormous task which he has undertaken.

Message to staff

IN HIS message to the railway staff, Dr. Beeching emphasised that the whole future of the railways would be decided by what happened in the next few years. It was essential to regain the full confidence and sympathy of the nation. To satisfy the public, and railwaymen, it was necessary to improve services and to make them pay. Modernisation was essential for both of these purposes, but results would not be achieved by modernisation alone. The formation and execution of plans which would lead to recovery from the present position would demand all the skill of the best management team that could be assembled. Even if the plans were good, success would still depend on the skill, self-discipline, and good sense of staff at all levels. A greater display of these qualities, which he knew to exist, would lead to big improvements at once. Dr. Beeching's message is reproduced in full on page 663.

Honourable retirement

Caerphilly Castle, one of the world's most famous locomotives, has been donated to the Science Museum at South Kensington. The presentation took place at a ceremony at Paddington on June 2, when the locomotive was handed over by Mr. R. F. Hanks, Chairman, Western Area Board of the British Transport Commission, to Dr. D. H. Follett, Director of the Science Museum. Mr. Hanks, when presenting the locomotive on behalf of the B.T.C., the Western Area Board, and the men of the Western Region, referred to the wonderful record of the "Castle" class, and paid a tribute to Mr. R. A. Smeddle, Chief Mechanical & Electrical Engineer, and his department, for the excellent manner in which the locomotive had been restored. Dr. Follett, in acknowledgement, expressed gratitude

on behalf of the Museum at this magnificent acquisition and referred to its famous progenitors already at South Kensington. Those present at the ceremony included Dr. R. Beeching, who was making his first public appearance at a railway function since assuming office, Mr. J. F. Harrison, Chief Mechanical Engineer, British Railways, Mr. J. R. Hammond, General Manager, Western Region, and Mr. F. W. Hawksworth, former Chief Mechanical Engineer, Great Western Railway.

B.E.A.M.A. export conference

THE British Electrical & Allied Manufacturers' Association is to hold a Golden Jubilee Export Conference at the Connaught Rooms, London, on October 5 and 6. The conference will emphasise the efforts being placed by electrical manufacturers on increasing their exports, and a conference luncheon on the first day will be addressed by the President of the Board of Trade. Papers and discussions will deal with electrical engineering and problems of trading with Europe and the Western Hemisphere. The second day of the conference will be reserved for a series of discussion groups on export subjects. Each group will have a member of the B.E.A.M.A. Export Panel as chairman, and the conference chairman will be Mr. Leonard Short, Chairman-Designate of the B.E.A.M.A. Export Panel, who is Director of Overseas Operations of the English Electric Co. Ltd.

E.A.R. & H. during April

DURING April, 1961, total earnings from East African railway and harbour services were approximately £1,973,000 (£1,971,000). Railway earnings were £43,000 below and harbour earnings were £8,500 below the levels estimated for the month under review but, at £1,570,000, railway earnings compared favourably with those of last year and represented an increase of £18,000. Receipts from goods and livestock traffic rose by £16,000, and road service receipts by £14,000. There was a decrease of £6,000 in receipts from hotel and catering services; £5,000 from inland marine services, and £1,000 from passengers and other coaching. Ports earned £403,000 compared with £419,000 during 1960. Revenue from imports and exports was approximately £182,000 and £110,000 respectively; the import figure showed a decrease of £10,000, and the exports improved by £4,000 compared with figures for April, 1960.

J. Stone & Co. (Deptford) Ltd. progress

THE annual report and accounts of Stone-Platt Industries Limited give some details of the progress of J. Stone & Co. (Deptford) Ltd. Indigenous manufacture of train-lighting and railway air-conditioning equipments in overseas territories continues, and a factory is being built near Buenos Aires for J. Stone y Cía (Argentina). The company's negotiations with the Argentine Government for the establishment of local manufacture were coupled with an undertaking by the State railways to place substantial orders for immediate requirements with the Deptford company. An order valued at over £½ million has been placed and will be filled at the Deptford works. The Stone-Carrier air-conditioning equipments installed on British Railways high-speed diesel Pullman trains are stated to be giving every satisfaction. Similar equipments are being fitted to 330 coaches which have been ordered from a Hungarian coach builder for service in the U.S.S.R. This is stated to be the largest single order for air-conditioned railway coaches ever placed.

Hungarian air-conditioned coaches

A CONTRACT concluded between the Hungarian Wagon & Machine Factory, Györ, and J. Stone & Co. (Deptford) Ltd. governs the Hungarian production of Stone-Carrier air-conditioning installations for railway coaches. In compliance with the licence contract, the preparation and organisation of the Hungarian production has begun. The contract is an important step both in the development of Hungarian-English commercial relations, and in the further modernisation of Hungarian railway-coach production. Orders have been received by the Hungarian company for the export of several hundreds of passenger coaches equipped with air-conditioning, and steps have been taken to organise the production of Stone-Carrier system. Until the Hungarian series production of these installations is started, the air-conditioning equipment and spare parts are being delivered by J. Stone & Co. (Deptford) Ltd.

Progress of C.I.E.

DR. C. S. ANDREWS, Chairman of Coras Iompair Eireann, recently stated that provisional figures indicate that last year's loss of £700,000 had been reduced to less than £250,000. This achievement was all the more creditable in view of the bus strike, which had cost over £70,000, and higher costs which had been met not only without increasing rates and fares but after making a substantial reduction in certain provincial bus fares. The most significant contribution to the result had been the continued improvement in revenue, which exceeded last year's figure by almost £1 million. Another gratifying feature was the record figure for goods carryings by rail and road. Railway receipts were up by more than £500,000—an indication of the effects of commercial freedom and the success of the sales force. C.I.E. existed to serve the public, and the increase in revenue gave the best evidence of public satisfaction. Progress had been made with the development of a sound organisational structure and improvements would continue to be carried out. Mr. Andrews thought the system might pay its way before 1964.

What a railway buys

MORE than 66,000 different items are purchased by the Stores Branch of the Western Australian Government Railways. The goods range from needles to locomotives and include medical supplies, table linen, frying pans, and hot-water bottles. Last year, the W.A.G.R. spent £5,610,300 on material and equipment for the improvements, maintenance, and operation of services and facilities. The department buys local products provided that quality and cost approximate those of imports. In this way, the railway has fostered the expansion of several Western Australian industries, for which the W.A.G.R. is a major purchasing power. Last year, over £760,000 worth of coal, and over £310,000 worth of timber was purchased locally by the department. Paint, track equipment, rolling-stock, stationery, and blankets were also bought in the State, and railwaymen's uniforms were made in the country from local materials. Local flax from Boyup Brook was used in the manufacture of the 10,000 tarpaulins valued at £240,000 which are in service on the W.A.G.R.

South-West African gauge conversion

HITHERTO the longest section of 2 ft. gauge in the South African Railways system was in northern South-West Africa. Since 1905 this 350-mile section has had to serve the whole area north of Usakos, its junction point with the 3-ft. 6-in. gauge line from Cape Province to Walvis. The narrow gauge runs thence north eastwards to Tsumeb, with branches from Otjiwarongo to Outjo, and Otavi to Grootfontein. The break of gauge at Usakos has been a great handicap to traffic to and from the narrow-gauge line. It has necessitated the uneconomic transhipment of goods and cattle, with much time wasted, and discomfort to passengers. It was therefore decided to convert the narrow to 3-ft. 6-in. gauge

over a period of three years. Including the building of a number of new stations and other ancillary works, this has cost nearly £7 million. The conversion was opened by the Minister of Transport on February 28 last. The whole of the railway system in South-West Africa has been worked uneconomically and with difficulty by steam traction, because coal had to be carried some 2,000 miles from the Transvaal, and water supplies were irregular and poor in quality. Opportunity was therefore taken with the gauge-conversion to change over to diesel operation; 115 diesel units were purchased at a cost of about £11 million.

Copenhagen conference

THE International Congress on Combustion Engines (C.I.M.A.C.) Conference, to be held in Copenhagen, June 18–23 next year, will have as its theme advances in engines of the higher horse-powers. Consideration will be given to recent developments with diesel engines and gas turbines above 3,000 h.p. an engine, and with gas engines above 1,500 h.p. Subjects likely to be covered by papers are large slow-running engines, medium- and fast-running engines, dual-fuel engines, and the development of supercharging. Engine components, heat-transfer and heat-release problems, free-piston gas generator turbines, gas turbines, and heavy fuel for diesel engines and gas turbines will also probably be considered. Six double technical sessions are planned; a detailed programme is expected to be available in the autumn.

Greater capacity for Southern India

THE Southern Railway of India has the monopoly of all South Indian traffic south of latitude 16 deg., but that area, though much of it densely populated, contains no coal and only one small iron and steel works. Consequently, all coal, iron, and steelwork have to be imported from Central and Eastern India. The two main routes followed by the inflow of this traffic are: via Calcutta and the S.E.R. east coast main line to Waltair—where it passes on to the Southern Railway and continues down the coast to Madras and the south—and from Central India via Nagpur to Bezwada, now known as Vijaywada, on the S.R. east coast line. The two principal targets of this railway are therefore to be able to receive and forward freely 600 wagons daily at Waltair and 500 at Bezwada during the Third Plan period. This will necessitate completion of the various line-doublings and regradings programmed on both the east and west coast and the Bombay lines, as well as the strengthening of the Kristna and other vital bridges.

East African Railways & Harbours in 1960

SIR James Farquharson, Acting Commissioner for Transport General Manager, states in his annual report, a copy of which we have received, that despite the rather uncertain economic trends, the financial position of the East African Railways & Harbours undertaking in 1960 was well maintained. Revenue slightly exceeded that of the previous year, and although there were some wage increases, various economies ensured that there was only a modest rise in expenditure.

Goods traffic carried over the inland transport services showed a small increase, with little change in either the quantity or type of the principal commodities handled. Public tonnage originating over the entire system was 1·5 per cent greater at 4,130,000. Public ton-miles rose 2·8 per cent to 1,630m., another record.

Goods traffic on the Lake Services fell by 40,000 tons, or 10·8 per cent, to 330,000. Bulk oil tonnage went up from 7,600 to 12,500. Because of a smaller cotton crop the tonnages carried over Lakes Kioga and Albert and the West Nile Services were 20,000 tons down at 77,000. On Lake Tanganyika there was little change, although the tonnage of bulk oil from Kigoma to Mpulungu rose almost 12 per cent to 4,000 tons.

Passenger journeys declined by 779,000 to 5,352,000, but a slight improvement in revenue indicated that average mileage per journey had increased. Several short-distance services were withdrawn, and another factor was the strike on the Tanganyika road services, which accounted for 182,000 of the decrease. Although upper-class journeys fell 4,000 to 281,000, revenue went up £28,000 to £671,000. Third class passengers dropped sharply by 775,000 to 5,071,000, but revenue was only £25,000 less at £1,272,000.

On the inland waterways first and second-class passengers decreased 1·3 per cent to 4,000, while third class traffic fell from 660,000 to 486,000 as a direct result of the withdrawal of the Mwanza Launch Services and the Karumo Ferry. In October, there was an unprecedented rise in third class travel on Lake Victoria. Passenger revenue was down £9,000 to £136,000.

To counteract competition, a further reduction in the higher rates, effective at the beginning of the year, restricted the rise in revenue, which was only £615,000 more at £24·8m., comprising £19,673,000 from railways (up £159,000) and £5,127,000 from harbours (£456,000 more).

Ordinary working expenditure on railway account increased £135,000 to £14,045,000, a result " reasonably satisfactory " in view of higher tonnages moved. The total was only £17,000 above that in 1957, although goods ton-mileage has gone up by 12·1 per cent since then. Operating ratio for the railways was unaltered at 81 per cent. Harbours Account ordinary expenditure rose £126,000 to £3,534,000, but the increase included overtime costs of £74,500 not previously included as expenditure.

Some of the principal results were as follow:—

	1959	1960
	000	000
Railways, steamers and motor transport :—		
Total train-mileage	9,902	9,812
Passenger journeys	6,131	5,352
Goods tonnage	4,070	4,130
	£000	£000
Coaching receipts	2,149	2,163
Goods receipts	15,260	15,569
Total receipts	19,514	19,673
Working expenses	13,910	14,045
Harbours :		
Receipts	4,671	5,127
Expenditure	3,708	3,829

The number of staff directly employed at the end of 1960 was 49,166, or 2,353 fewer than in 1959, and consisted of 43,083 Africans, 4,496 Asians, and 1,587 Europeans. The total cost of salaries and wages, including house allowance paid in cash, but excluding other allowances—housing, medical, passages and pensions fund costs—for all staff directly employed was £8,920,176 (£7,926,373 Railways, and £993,803 Harbours), an increase of £210,636 despite the lower numbers.

In Uganda, work continued throughout 1960 on the 46-mile cut-off between Bukonte and Jinja. Earthworks on a new rail extension from Soroti to Lira began towards the end of the year, and a further extension to Gulu was planned. A new 45-mile branch line, from Kilosa on the Tanganyika Central Line to Mikumi was opened, and preliminary work on a 117-mile rail link between Nnyusi on the Tanga Line and Ruvu on the Central Line, began in June.

At Kisumu the erection of the hull of the new lake-vessel rms. *Victoria* was completed, and she was now being fitted out. A new port, costing £200,000, was opened at Mwanza South. Underwater surveying was carried out in preparation for the construction of a tanker terminal at Port Reitz, Mombasa, and a start was made on deepening the entrance over the coral bar to permit passage of large tankers. A sisal shed to increase storage space by 25 per cent is planned for Tanga.

Timekeeping of all rail services on the Kenya-Uganda section improved considerably, the percentage of punctual arrivals increasing from 56·1 to 65·4 for passenger trains, from 42·5 to 53·5 for mixed trains, and from 49·7 to 57·1 for goods trains.

No new steam locomotives were put into service in 1960 and none were withdrawn. Eight new 1,850 h.p. (90 Class) main-line diesel-electric locomotives were in service, but their overall availability had so far not come up to expectations as most had suffered periods out of service because of electrical

and mechanical defects. The air-braking system required modification, and a minor collision revealed a weakness in the headstocks, but possible damage here was an ever-present hazard while the low level ABC type coupler was still in use. The remaining two locomotives of this order arrived in January, 1961.

Although maintenance costs per route mile increased slightly in 1960, following the considerable decrease in 1959, the position was regarded as satisfactory bearing in mind the higher wages paid in 1960.

Inland transport of iron and steel

VIRTUALLY all the heavy raw materials used by the iron and steel industry involving public transport, as well as a substantial quantity of finished products, are carried by rail. These facts were revealed in the Iron & Steel Board's Special Report, 1961, "Development in the iron and steel industry." Iron ore, coal, and scrap traffic was regular, and had a high density which gave good loading. For such traffic the railway was the most economic means of transport. Between a quarter and a third of railway traffic receipts was derived from the trade and in 1958 freight traffic as a whole contributed £60 million to meet British Railways' overhead expenses, of this between £15 million and £20 million was attributable to the carriage of iron and steel. During that year passenger traffic made no contribution to overhead expenses at all.

The size of wagons, particularly for iron ore, has been increased. Three large works receive all their imported ore in light-capacity hopper wagons permitting single train loads of up to 900 tons of ore. The wagons are restricted to certain routes and for two of these the trains are fitted with continuous brakes. In one works the wagons are not uncoupled from the locomotive and a train leaves, empty, 15 minutes after arrival. The size of standard ore wagons too has been increased; there are in use 25½-ton hopper, and 27-ton tippler wagons, compared to 12-20 tons capacity in use before the war. Tippler wagons of 35 tons have been proposed by the industry. There has not been the same progress with coal wagons. So far it has been possible to use 24½-ton coal wagons only on a limited scale. The position with regard to the size of steel-carrying wagons was satisfactory. Special 42–45-ton high-capacity bogie wagons are being designed to carry steel slabs between Margam and Llanwern and sheet in coil on the return. Similar wagons of 50–60-ton capacity will run between Ravenscraig and Gartcosh. All new steel-carrying wagons are being fitted with vacuum brakes to enable them to be included in fully-fitted freight trains many of which give overnight delivery.

In July, 1959, the Iron & Steel Board reduced prices for orders in one specification for one delivery to one destination. The reduction was of the order of £1 a ton for quantities of 50 tons or more, with smaller reductions for smaller orders, although in general there was no reduction for orders of less than 10 tons. It was expected that this would increase the average wagon load but no marked change has so far become apparent.

British Transport Commission traffic receipts

ALTHOUGH the British Transport Commission traffic receipts for the four weeks ended May 21 show that passenger receipts have increased compared with the corresponding period last year, there has been a slight decrease compared with the previous four weeks this year. This is remarkable, as one would expect a steady monthly increase from the Easter holiday to the summer holiday peak. The latest period does not contain any of the receipts on Whit-Monday, and this may account for some of the decrease. Merchandise and livestock showed an encouraging increase. Although minerals and coal and coke receipts continued to show a decline, it is interesting to note that the decrease in coal and coke carrying was considerably less than in the previous period this year.

	Four weeks to		Incr. or Decr.	Aggregate for 24 weeks to		Incr. or Decr.
	May 21, 1961	May 22, 1960		May 21, 1961	May 22, 1960	
	1961 £000	1960 £000		1961 £000	1960 £000	
Passengers—						
British Railways	11,974	10,661	+ 1,313	53,679	49,504	+ 4,175
London Transport—						
Road passenger services	4,672	4,461	+ 211	22,284	21,320	+ 964
Railways	2,195	2,034	+ 161	10,821	9,829	+ 992
Provincial & Scottish Buses	4,800	4,478	+ 322	22,567	21,199	+ 1,368
Ships	436	437	— 1	1,693	1,567	+ 126
Total passengers ...	24,077	22,071	+ 2,006	111,044	103,419	+ 7,625
Freight, Parcels & Mails—						
British Railways—						
*Merchandise & livestock	8,193	8,181	+ 12	40,033	39,560	+ 473
*Minerals	3,503	3,897	— 394	18,243	19,214	— 971
*Coal & Coke	7,935	7,997	— 62	42,411	44,174	— 1,763
*Parcels, etc., by coaching train	4,541	4,419	+ 122	21,158	20,987	+ 171
*Total freight, British Railways	24,172	24,494	— 322	121,845	123,935	— 2,090
†Others	5,086	4,694	+ 392	24,124	21,906	+ 2,218
Total freight, parcels & mails	29,258	29,188	+ 70	145,969	145,841	+ 128
Total	53,335	51,259	+ 2,076	257,013	249,260	+ 7,753

*Includes receipts from collection and delivery, etc.
†Receipts from railway movements wholly within dock areas, included in previous periods under "Freight, Parcels and Mails," are now classified as miscellaneous.

PERCENTAGE VARIATION 1961 COMPARED WITH 1960

	Four weeks to May 21, 1961	20 weeks to May 21, 1961
British Railways :		
Passengers	+ 12·2	+ 8·4
Parcels	+ 2·7	+ 0·8
Merchandise & livestock	+ 0·1	+ 1·1
Minerals	— 10·1	— 5·0
Coal & Coke	— 0·7	— 3·9
Total	+ 2·8	+ 1·2
Ships, passengers	—	8·0
British Road Services, Inland Waterways & Ships (cargo)...	+ 8·3	+ 10·1
Road Passenger Transport, Provincial & Scottish	+ 4·7	+ 4·5
London Transport—		
Railways	+ 7·9	+ 10·0
Road services	+ 4·7	+ 4·5
Total	+ 5·7	+ 6·2
Aggregate	+ 4·0	+ 3·1

Trackwork engineering

A HIGHER standard of living, widespread industrial developments and political adjustments have combined in recent years to produce a new era in railway development. Labour costs have risen to such an extent as to enforce, to a large extent, the substitution of mechanisation and greater efficiency in design and maintenance. In this country one of the major results has been the now-almost-universal adoption of the flat-bottom rail, often in long welded lengths. The remarkable expansion in overseas railways has also promoted greater demands on the resources of the United Kingdom for all kinds of modern equipment. Furthermore, new steel plants and mineral workings, extensions of ports, harbours, and dockyards, requiring in aggregate quite an appreciable quantity of trackwork, have added their quota to these demands.

On the other hand, the general expansion of industry in all directions has caused a scarcity of labour needed for maintenance, and enforced a marked acceleration in research and development towards reducing maintenance and renewal time. An outstanding result has been the introduction of a heavier and wider-flanged rail, welded into long lengths, and also a greater use of austenitic manganese steel. This new era in permanent way development has suggested the publication of a remarkable volume entitled "Trackwork Engineering" by Edgar Allen & Co. Ltd.

Between stiff covers, its nearly 300 loose pages include details of many trends in track development throughout the

world. On almost every page are either excellent photographic reproductions, the clearest of diagrams, or valuable tables supplementing descriptions of every type of material, phase of manufacture and design of layout. The wide uses of manganese steel not only in the track but also in such things as axleboxes and bearings are also covered, as also is the testing and hardness of materials.

From an initial history of rail design, the story proceeds to modern practice and rail-sections, rail-rolling and the production of austenitic manganese steel. Chairs and fastenings, rail joints, junctions, switches, and crossings of all types are described in detail. The greatest attention is devoted to manganese steel and its products. The latter part of the work is given over mainly to industrial and tramway trackwork, and to the wearing properties of manganese steel in other spheres. Finally, a chapter on "General Information" provides a wealth of tabular and other theoretical details. The firm is to be congratulated on the excellence of the production of this book, with its profuse illustrations, and the valuable information it imparts.

Precarious state of American railways

THE February statement of railway revenues and expenses shows no improvement in the position of the U.S.A. railways. For the first two months of the year operating revenues were $196 million, or 12·6 per cent, less than in 1960. Freight revenue was down 13·8 per cent, passenger revenue 3·5 per cent and parcels receipts 21·5 per cent. Operating expenses were $85 million, or 6.7 per cent lower, but the operating ratio rose from 80·2 last year to 85·6. Though taxes of all kinds decreased by $25·6 million, or 15 per cent, the 1960 earnings (before charges) disappeared and the railways, as a whole, were left with a deficit of $8·9 million.

The situation is worst in the Eastern District, where 24 of the 40 railways reported deficits, amounting in total to $50·7 million. The New York Central, operating at a ratio of 97 per cent, was nearly $13 million to the bad and the Pennsylvania, with a ratio of 91 per cent, was $11·5 million behind. The New Haven, operating 1,740 miles at a ratio of $105, had a deficit of $6·2 million against $2·3 million in 1960.

In the Western District, the Burlington and the Rock Island increased earnings slightly, but the net railway operating income for the 124,750 miles of road involved was almost halved. Even the coal roads in the Pocahontas Region were affected. The Chesapeake & Ohio lost 17 per cent of its freight revenue and 35 per cent of its earnings; the Norfolk & Western lost less than 10 per cent of freight revenue and, continuing to work at the low ratio of 59·8 per cent, had earnings of $8·6 million, the highest figure for any U.S.A. railway but 15 per cent less than last year's level.

The slump in traffic volume persisted through March. In the first 15 weeks of the year wagon loadings numbered about 7,411,500, a decrease from 1960 of 1,388,700, nearly 16 per cent. At the time of writing, the prospects of an upsurge in forwardings after the close of this half-year are uncertain. Much will depend on the recovery of the steel industry and the success of this year's grain crops.

The Argentine Railways

THE situation of the Argentine Railways, which has been deteriorating at an ever-increasing rate over the past few years, has now reached a point at which drastic measures must be taken. On the one hand, the services on many lines are scarcely worthy of the name. The former Buenos Aires Great Southern Railway, now General Roca, is an extreme case. Trains run with as few as three coaches, with delays up to two or three hours at times, when wholesale cancellations are not in force. The majority of coaches are in a dilapidated condition. Accidents, derailments and delays are the order of the day.

On the other hand, the railwaymen's unions are pressing for massive increases and larger family bonuses, backing up their demands by a 24-hr. nation-wide strike on May 15. The enginemen's union asked for increases ranging from 2,150 to 5,500 pesos monthly (the latter figure is the former salary of a general manager), representing about 50 per cent, and the Union Ferroviaria asked for a blanket increase of 2,000 pesos for all grades. Family bonuses were to be augmented from 150 to 950 pesos monthly for a wife and from 150 to 450 pesos for each child.

President Frondizi and his ministers have realised that this state of affairs can no longer continue. The public has had to face successive increases in rates and charges with the promise of better services, but the increased revenue has always been more than offset by labour demands. The new "economic team" headed by Eng. Arturo Acevedo, Minister of Public Works & Services, which took over recently, has grappled courageously with the problem and has announced a series of measures to be put into force at once. It points out that the deficit of the railways is driving the country into bankruptcy and precludes the balancing of the national budget. The present figure is 23,000 million pesos yearly, which would be increased by 10,500 million pesos if labour's demands were met in full, making a total deficit of 33,500 million pesos, or more than a quarter of the national budget of 120,000 million pesos. Present annual receipts are only 17,000 million pesos. The accumulated deficit since 1952 is 144,000 million pesos. One of the principal Buenos Aires papers recently stated in a leading article: "We must eliminate the railway deficit before the railway deficit eliminates us."

Faced with these two sides of the picture, and with the preliminary report of the World Bank experts to guide them, a new aspect has come into view as a result of the visit of M. Antoine Pinay, former French Premier, who provided Eng. Acevedo with a series of figures relating to the rehabilitation of the French railways over a period of only four years. An immediate economy of 35 per cent was attained through electrification, said M. Pinay, and higher speeds (130 k.p.h. for passenger trains and 110 k.p.h. for goods trains) allowed of 100 per cent increase in goods traffic and 45 per cent in passenger traffic, with a greatly reduced number of locomotives, coaches and wagons. Fewer trains were run and the railway staff was reduced by 140,000 men, leaving the State-owned railways as a profit-making concern.

The measures now to be taken in Argentina are as follows:—

Increases in rates and charges.—These will be approximately 25 per cent for goods rates, 40 per cent for long-distance passenger fares, and 60-70 per cent for suburban passenger fares.

Reduction of staff.—Some 75,000 of the 225,000 men employed at present will be declared redundant. Some 20,000 who are in a position to take superannuation benefit will do so at once, and 55,000 will be transferred to other Government departments, private industry, or will receive full indemnity over a period of 18 months.

Closing of unproductive branches.—A decree will be issued shortly ordering the lifting of 4,000 km. of unproductive branches, among which will probably be the following: Urquiza Railway, Rojas to 4 de Febrero; Belgrano Railway, Anatuya to Los Linares, Pie de Palo to Los Juries, and Bandera to Los Juries; Mitre Railway, Landeta to San Francisco, San Jorge to Landeta, and Matilde to Garibaldi.

Transfer of unproductive services.—Unproductive services will be transferred to private hands. Among these are restaurants, refreshment rooms and dining cars, and also sleeping cars. The Villalonga-Furlong Express Company will be handed over to a co-operative society to be formed by its staff.

Elimination of free official services.—Other Government departments will be required to pay full rates, without exception. Principal among these is the Argentine Post Office which will have to pay for carriage of mail and parcels.

The official labour viewpoint on such measures hitherto

has been unfavourable, but perhaps it is a good sign that the threat of further strikes has been avoided by an agreement which raises family bonuses from 150 to 550 pesos for a wife and 150 to 300 pesos for each child, with a special bonus for education as each child enters school. A committee is to be set up which will fix future rates of pay with special reference to all these factors.

The Indian Railway Inspectorate in 1959-60

WE have received from the Chief Government Inspector of Railways in India a copy of his report for the year ended March 31, 1960. Under him were Government Inspectors in charge of the Bombay, Calcutta, Lucknow, and Bangalore Circles. The route-mileage under their jurisdiction was 35,184; 98·2 per cent of this figure were Government-owned railways, and 98·7 were Government-managed, the remaining 1·3 per cent. were managed by companies and local authorities.

During the year under review, the inspectors carried out detailed inspections of 96·30 miles of new lines, 223·91 miles of doubling of and 3·77 miles of diversions of existing lines, and also 4·40 of realignments. No lines were closed to passenger traffic during the year. Moreover, all company lines were inspected, and the inspectors accompanied the General Managers of Government systems on annual inspections of 14,838 route-miles.

The Railway Board sanctioned the running of a large number of different types of locomotive and rolling-stock on specific sections of line, including the new "WT" class broad-gauge tank engine, electric and diesel locomotives, and high-capacity wagons.

Over 3,800 sanctions were accorded to the opening of new crossing stations, station-yard remodellings, new bridges, signalling installations, and track improvements. Some 400 movements of over-dimensional consignments were also sanctioned, as well as 63 works involving infringements of scheduled dimensions; 55 of the latter were also removed.

During the year under review statutory inquiries were held into 11 train accidents, compared with 17 during the previous year. Of the 11, six were derailments and five were collisions. No fewer than four of the derailments were caused deliberately by sabotage, and one was the result of a cyclone blowing over a complete 2 ft. 6 in. gauge train except the engine.

The sixth derailment was of more interest. On August 31, 1959, a passenger train on the 5-ft. 6-in. gauge system of the Central Railway running over a 1,650-ft. rad. curve became derailed to the extent of the engine and seven leading coaches, but only two persons were seriously hurt. The engine was of the "CWD" class and the cause of the derailment was excessive lateral flange forces of the leading coupled wheels on the outer rail of the curve, a tendency inherent in this class of engine. In this case, the tendency was aggravated by indifferent maintenance. The resulting recommendations restricted "C.W.D." engines to 40 m.p.h. speeds on sharp curves and to the haulage of slow passenger trains. They required further trials to determine maximum flange forces and permissible speeds with these engines.

The collisions were all at stations. At Erode (Southern Railway) a light engine ran into the rear of a stationary express, exceeding the 10 m.p.h. limit for movement on shunt signals. At Dharmavaram, Southern Railway, a passenger train passed signals at danger and collided with two coupled engines shunting. At Bidnapur, Northern Railway, a passenger train was admitted on clear signals to a line occupied by a goods train; three people were killed in the collision. The station staff was to blame, but the driver also entered the station too fast. The use of collars on all points and signal levers and electric slide instruments was recommended for the protection of stationary trains in such circumstances.

At Chinsura, Eastern Railway, also, a train was admitted to a line already occupied by a preceding passenger train. The cabinman was to blame, and track-circuiting was recommended at all double-line stations between home and starting signals. Again at Kishanganj, North-East Frontier Railway, a passenger train was received on a line occupied by a military special at rest. The station staff was at fault for not locking the lever frame, thus permitting an unauthorised person to lower signals for the passenger train. It was recommended that the frame should be moved near the Stationmaster's office to facilitate supervision.

During 1959–60, heavy rain and floods caused interruptions of train services of shorter periods than usual, but two sections of the Central Railway were closed for 39 and 37 days on these accounts.

South Australian Railways

A DETERIORATION of £458,635 in the financial results of the South Australian Railways for the year ended June 30, 1960 is recorded in the annual report of Mr. J. A. Fargher, the Railways' Commissioner, a copy of which he has sent us. The system returned to deficit working, with a net deficit for the period of £471,991, compared with a net surplus of £436,644 in 1958-59, and a net deficit of £375,914 in 1957-58. Salaries and wages were substantially higher, costing £689,000 more, but this was offset by £377,000 saved through greater operational efficiency with new equipment. Mr. Fargher estimates that in the current year expenditure on salaries and wages will be £224,000 more than in 1959-60.

Earnings decreased by £94,776 to £12,826,114, while ordinary working expenses went up by £167,031 to £14,269,569. The contribution by the State Treasurer towards greater costs not covered by higher freight and passenger charges was reduced from £3,850,000 to £3,400,000. Total expenditure of £17,498,105 was £363,859 greater in the latest year. Prices paid for materials other than fuel went up by £130,000, but £153,000 less was paid for fuel. The following are the principal results for the two years 1958-59 and 1959-60:

	1959-60	1958-59
	(Thousands)	
Total train miles	6,887	6,890
Passenger journeys	17,038	16,805
Goods tonnage (freight paying)	4,059	4,227
	(£ Thousands)	
Coaching receipts	2,064	1,973
Goods receipts	9,110	9,364
Total receipts	12,826	12,921
Total working expenses	14,721	14,532
Route mileage	2,532½	2,533

The tonnage of goods carried was adversely affected by the drought of 1959, and reduced quantities of lead and zinc concentrates loaded at Broken Hill. Grain tonnages handled dropped to 735,675 tons, against 890,600 in 1958-59. Excluding grain, minerals, firewood, manures and livestock, general merchandise carried increased from 1,489,000 tons to 1,518,000 tons, and the ton-miles from 236 million to 247 million. This increase in general merchandise traffic is gratifying, says Mr. Fargher. However, the tonnage of all freight and livestock declined from 4,226,934 tons to 4,059,053 tons, and the ton-miles from 605·4 million to 596·4 million.

The number of suburban passengers carried improved to 15,997,415, against 15,703,472, but the number of country passengers decreased from 1,101,392 to 1,040,246. Revenue from passengers carried, however, went up from £1,493,781 to £1,607,822.

There was again a further substantial reduction in the use of coal and oil for steam locomotives, following the introduction of further diesel locomotives and railcars. At the end of the year there were 52 diesel-electric locomotives operating on broad gauge lines. The fleet of suburban railcars was increased by 60 by the completion of an additional 18 cars during the year. A further 22 are under construction. The effort put into track maintenance showed a small increase over the previous year, and arrears of maintenance were further reduced. The broadening of the gauge in the south east has been completed.

LETTERS TO THE EDITOR

THE EDITOR IS NOT RESPONSIBLE FOR THE OPINIONS OF CORRESPONDENTS

DIESEL AND ELECTRIC TRACTION

May 12

SIR, While a layman should not normally argue the point with Assistant Chief Mechanical Engineers on their own subjects, some of the statements made by Mr. E. S. Cox to his African audiences are so extraordinary as to call for comment: (page 555, your issue of May 19).

"A Type 4 (diesel-electric) locomotive of 2,000 h.p. provides no margin over the larger steam locomotives . . ." Is it not a fact that such a machine provides no worth-while margin over a Class "7" steam job and cannot, in express passenger work, replace the larger Class "8" units ?

"The Type 5 of 3,300 h.p. on the other hand is too powerful and too costly for the majority of services so a happy mean of 2,700 h.p. is aimed at and should cover the greater part of our needs."

Passing over the fact that one 3,300-h.p. diesel is less costly than any double-headed combination, the above statement presumes a standard of service so far below that promised in the original Modernisation Plan as to be out of this world. That promise was for passenger schedules of an average speed of 75 m.p.h. On the electrified West Coast lines we are now promised 65 m.p.h. to Liverpool and Manchester and that with a locomotive having an effective output 50 per cent greater than that of a Type 5 diesel.

"So far as Britain is concerned, 40 years has been agreed as the life of a diesel . . ." One wonders with whom that agreement has been reached and what is going to happen to the financial angle if the diesels themselves disagree, follow the American pattern and start going to the scrap yard at 12-18 years.

Finally, I quote in full the ultimate paragraph of your article on the points made by Mr. Cox.

"The economic state of British Railways would not permit general continuance of steam for the many years which must elapse before all trunk routes are electrified and diesel traction is giving immediate relief by widespread and quickly realisable reductions in running costs."

Taking it that all costs are included, is there one concrete word of truth in that statement ? Is there any tittle of evidence to show that British Railways are better off today than they would have been had they gone all out for electrification, spending a fraction of the diesel investment on maintaining steam stock ? If there is, then a great effort has been made to keep the information secret.

Yours faithfully,

L. IRVINE-BROWN

Ivydene, Tilston,
Malpas, Cheshire

[It is difficult to compare the horse-power of electric and diesel locomotives with that of steam locomotives. The latter are ultimately dependent on quality of coal and skill in firing.

The life of a locomotive is determined by the cost of repairs. A new engine will be required during the life of a diesel locomotive in the same way that the major components of a steam locomotive require renewal. There is now much British experience and it is on this that the assessment has been made. It would not have been possible for B.R. to provide as good a service had steam alone continued to be the motive power.

Locomotive engineers are generally agreed that the policy which is being pursued is correct, and has already effected large savings. When criticism is forthcoming it is often directed at the relatively tardy introduction of main-line diesels in Britain. Had original proposals been proceeded with there would by now have been much more experience and some of the teething troubles would have been long since forgotten. At the time the Modernisation Plan was introduced it was explained that electrification must take many years to complete. It was to offer short-term relief that the use of diesel power was introduced.—ED. *R.G.*]

RAILWAYS INTO ROADS

May 28

SIR, There is no arithmetic but arithmetic. Mr. Hamilton Ellis, in your issue of April 21, wrote loftily of my "extraordinary sort of arithmetic," but such adjectives do not go with arithmetic: let him fault me if he can. Meanwhile, as he relies on rhetoric to counter the logic of railway conversion, he is unwise to use figures. His vivid "five passenger seats a second" between Liverpool Street and Shenfield amounts to no more than 18,000 an hour, whereas—to quote an American report—"20,000 to 25,000 persons per hour are regularly moved in buses in a single lane of the Lincoln Tunnel with ample room for many private cars as well."

The Liverpool Street–Shenfield route is indeed a typical example of passenger-carrying capacity forfeited through using railway trains instead of buses and other free-running motor vehicles. As a road it could have more lanes than it has rail-tracks at present, and one of the lanes each way would suffice to carry, in buses, many more passengers than the entire railway now carries. There would be no occasion to widen the formation. The Railway Conversion League has not, as Mr. Hamilton Ellis chooses to allege, varied its views on that point.

Yours faithfully,

T. I. LLOYD

24, Grove Road, Merrow,
Guildford, Surrey

RAIL TRANSPORT TO LONDON AIRPORT

May 31

SIR, The letter on the subject of rail transport to London Airport from the London Transport Press Officer in your May 26 issue stated that "the total estimated revenue, at standard fares, would clearly not cover the combined operating and capital costs" of a rail extension to London Airport. We are not told what the total traffic and revenue is estimated to be nor what the operating costs will be and, as the previously quoted estimate of £12 million for the capital cost is now admitted to be nearly 10 per cent too high, in the absence of any supporting figures I feel that this statement is made because London Transport is reluctant to build the line and transfer some traffic from road to rail.

We are also told, again without any supporting evidence, that the present airport coaches are "unsuitable for ordinary passenger services." I find this very hard to believe and can assure the writer that many ordinary travellers who have failed to board a 704/705 Green Line coach because of overcrowding would be delighted to travel by one of the many airport coaches which pass by while they are waiting.

It is hard to follow the argument used against building the rail extension that "against any saving of operating cost on airport coaches would have to be set the loss of revenue from these coaches." If the coaches are no longer needed there would be complete saving of their operating costs while the revenue which they formerly produced would be transferred to the Underground services. These would not require any increase in operating costs except for the Hounslow West—London Airport section. To eliminate a fleet of coaches and

to transport their passengers by existing rail services between central London and Hounslow West must surely produce more net income for London Transport over this section.

The suggestion in the second paragraph of the letter that it would be impracticable to reduce the bus services to the airport in proportion to the transfer of passengers to the rail extension implies that present services are adequate and provide a reliable connecting service with the trains. This is certainly not borne out by experience at Hounslow West, where connections are frequently just missed as a result of the apparent lack of liaison between Underground and bus timetable compilers, nor is it supported by the frequent complaints about bus services in the local press and the apologies which these produce from London Transport. I would have thought it would welcome this opportunity to replace a number of buses on one route by a rail service so that these could be used on other routes in the area where the Executive admits its inability to provide a full service.

Yours faithfully,

J. MORLEY

124, Byron Avenue, Cranford,
Hounslow, Middlesex

THE MARPLES REGIME

May 16

SIR, I see that the annual deficit of British Railways is to be increased by £24,000 because of the appointment of Dr. Richard Beeching as Chairman of the British Railways Board. No doubt his appointment will be followed by others at equally inflated salaries to complete the board.

It will be of interest for the taxpayer to learn what will be the annual cost that he will now be called on to bear because of this fresh Marplesism.

In your editorial of March 31 you state : "A great deal, obviously, must depend on the personnel of this body in bringing to fruition the plans of the Government for the reorganisation of the railways. The board itself cannot have statutory power until some time next year when the necessary legislation becomes effective, but in the meantime it will act as a "shadow" body preparing the way for the major changes which will then come about."

What are the Government's plans to which you refer ? To many, they are only too clear. That each and every one of the gyrations and vacillations with respect to the modernisation programme and the confusion and uncertainty generated within the ranks of British Railways by this latest attempt to bowler-hat the present Executive is part of a planned move to discredit economic policies and theories not held by the present Government and its supporters and to present the physical and financial ruin of the British railway system as the foregone result of practising Socialist theories.

One aspect of ministerial policy toward British Railways modernisation and the favouring of road transport has escaped all notice and that is the immense burden thrown on the British economy by railway dieselisation and diversion of traffic to the highways, and especially the noxious effect it is having on the trade balance of Great Britain.

Every gallon of fuel and every pint or pound of lubricants consumed by road services or by British Railways has to be imported and thus paid for by the product of British exports. As road services—including "C" licence movements—multiply and railway diesel services spread, so does the strain on the foreign trade economy of the country increase.

The cost of these imports, which are not essential to the economy of the country, is so high that to balance imports with exports is a chimera. It is no exaggeration to state that the import of petroleum products is the major factor in the U.K.'s unfavourable balance of trade.

If the gentlemen who formulated the scheme for modernisation of British Railways had considered this aspect of the whole, dieselisation of main lines would not have been adopted, for, in the long run, the national economy cannot afford it.

There is still time to rectify the situation. The only sane transport policy for a country that has to import 100 per cent of its petroleum requirements is to :—

i. Electrify those lines where traffic density warrants the investment.
ii. Continue to operate the remainder of the national railway system by steam.
iii. Restrict movement of passengers and freight by highway to hauls of 50 miles or under. In this respect the practice of New Zealand should be followed. There, movement of road freight is restricted to hauls of 30, 50, or 75 miles (depending on class of freight involved). The justification for the restriction lies in the low rates the government railways are thus able to quote on low-value commodities. "If high-rated traffic were diverted from railways to road transport," states the N.Z. Railways *Bulletin*, "a disproportionate increase would be inevitable in the charges for low-rated traffic, with dire results for the economy of the country as a whole."

All the points made by New Zealand are valid in Great Britain, and there is the additional overwhelming fact that the consumption of petroleum products by road services and diesel services, when other forms of motive power not involving imported fuel are available, is noxious to the national economy and direcly responsible for a lower standard of living in Great Britain than that attainable if so large a part of our national export product were not wasted on unnecessary imports of petroleum products.

No doubt the cost of operation of British Railways would be higher under a mixed economy of electric and steam traction, but the money spent on electric power and fuel for steam would remain in the country. It would merely transfer the astronomic cost of imported petroleum fuels from one British pocket to another British pocket, whereas the astronomic cost of imported petroleum fuels is transferred from a British pocket to the pocket of a foreign economic entity.

Mr. Kennedy has publicly stated in the U.S.A. that over 90 per cent of the cost of construction and maintenance of the national highway system is caused by the operation of heavy trucks, which cause an equal proportion of the wear and tear and damage to the highways and highway installations. If this is true for the U.S., it is equally true for the United Kingdom.

If Mr. Marples really considers the economic well-being of the country and its railway system to be his first duty as Minister of Transport, he will best serve the national interests by :—

i. Providing funds for electrification of all lines with sufficient actual or potential traffic to warrant the investment without further delay, so that the change-over to electric traction can be made as fast as it has been made in France.
ii. Put a halt to further dieselisation on British Railways, continue the equipment already in operation in service but permit no replacements of diesel units.
iii. Revert to steam operation on those parts of British Railways not scheduled for electrification.
iv. Introduce legislation on the lines of New Zealand legislation to prohibit all passenger and freight hauls by road in excess of 50 miles, except when the distance involved to the nearest railhead is in excess of 50 miles, when special permits for such operations could be issued, or where no railway service is available.

He would not only revitalise British Railways and save the frightening outlay now required to cover deficits and interest on British Railways, but would materially contribute to the closing of the gap between imports and exports.

Yours faithfully,

C. J. GREGG

International Railways of Central America,
Guatemala City

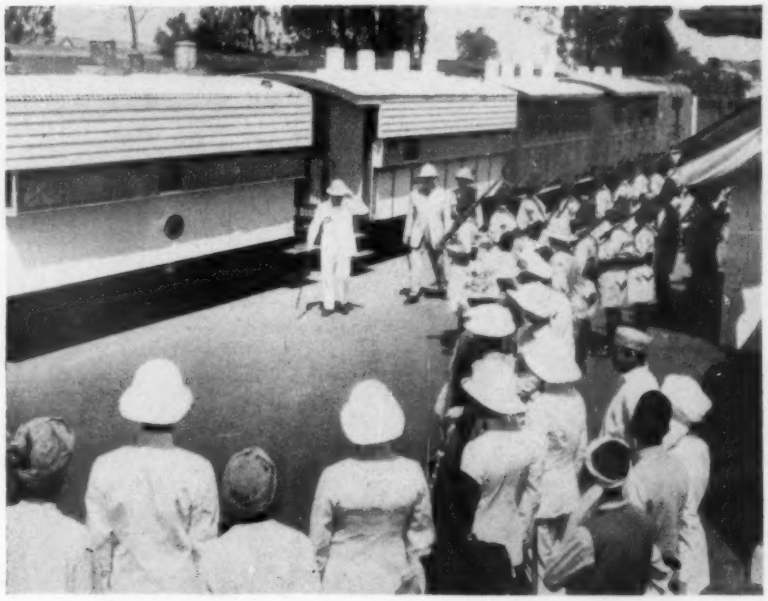
The Scrap Heap

Fine record

Mr. W. I. Inglis, who was guard on the ill-fated Wellington-Auckland express which was wrecked at Tangiwai, Christmas Eve, 1953, with heavy loss of life, has retired after 39 years of service with the New Zealand Railways Department. For his bravery at Tangiwai, Mr. Inglis was awarded the British Empire Medal—for his actions in ensuring that there was no panic and for rescuing people trapped in the sixth carriage, which toppled from the line into the river. He was also selected as a guard on the list of crews for trains used for part of the Royal tour through the North Island early in 1954.

Return to Port Florence

A visit by the Rt. Hon. Winston S. Churchill, Under Secretary for State for the Colonies, as he was then, to Port Florence—now Kisumu—in 1907, was recently re-enacted for the film of the building of the Uganda Railway, "Permanent Way." In the illustration Sir Winston Churchill's film double, in the white suit, is seen arriving at "Port Florence" in a train comprising authentic rolling stock, hauled by a wood-burning locomotive.



"Still" from E.A.R. & H. film—see "Return to Port Florence"

All boys together

The illustration below shows a facet of human behaviour common to every nation—boyish absorption in railway locomotives. Here, Russian youths are intently examining a railway exhibit on the stand of the Pressed Steel Co. Ltd. at Moscow. On this are displayed representative exhibits from the company's car body, refrigeration, and aircraft divisions. Marked Russian interest has been shown in the combination freight vehicle, the "Roadrailer." The Deputy Director of Machinoimport, the Railway Rolling Stock Division of the Soviet state machinery buying organisation, paid a special visit to the stand to see a model and film of this vehicle, which he described as "wonderful."

Russian interest in British railway equipment

Robert the rail ?

More than 200 people have expressed interest in the formation of a society to reopen the old Welsh Highland Railway as a result of moves by a Shrewsbury businessman, Mr. Robert Honeychurch. The initial plan is to open a three-mile stretch of line from Beddgelert to Nantmor, Merionethshire.

Funny place to park

An excursion train from Stoke-on-Trent to Barmouth struck an empty car which was lying on the railway track at Llangower, south of Lake Bala, recently, and pushed it 100 yd. The car was wrecked and the train was delayed for one and a half hrs. because of damage to its braking system. No one was hurt.

Skipped like young rams

Hundreds of day trippers recently jumped for their lives from a train at a station near Milan. Warned by telephone that 36 runaway trucks were rumbling down the line, the station-master had warned them through the loudspeaker system. Six still in the train escaped with bruises.

OVERSEAS RAILWAY AFFAIRS

FROM OUR CORRESPONDENTS

NEW SOUTH WALES

Melbourne-Sydney express in collision

On March 27 the second part of the overnight Melbourne–Sydney express collided with a coal train emerging from a siding at Glenlee Box near Campbelltown, about 30 miles south of Sydney. The express was mostly derailed and the coaches thrown on to a cutting slope; its derailed engine became detached. The engine of the 750-ton coal train was thrown 20 ft. sideways off the track. Though many passengers were slightly injured, only two and the express driver were detained in hospital. The Assistant Stationmaster, believing that its demolition was inevitable, jumped from the signalbox and like the goods-engine crew escaped injury; the box was not damaged as the impact threw the engines on each side clear of it.

VICTORIA

" Harris " suburban trains

The first of a new series of 30 seven-coach electric trains is expected to be in service in June on Melbourne suburban lines. They provide more seating as well as windows and blinds easier to operate, and multi-colour vinyl floor tiles, blending well with the interior colour schemes. Each train will cost £250,000, and will seat 53 more passengers than those in use. At present there are 1,047 carriages running on suburban lines. Of these 210 are modern "Harris" coaches and 232 are of the old swing door type, now being progressively withdrawn. The blue " Harris " trains with foam-rubber seating, wide doorways and windows and fluorescent lighting were first introduced in February, 1956. Their smooth silent riding qualities were particularly noticeable when compared to the older type of carriage.

NEW ZEALAND

Year's results

The New Zealand Railways Department showed a loss of only £62,759, excluding interest charges, for the year ended March 31, 1961, compared with a loss of £563,133 for the previous year. The Minister of Railways, Mr. McAlpine, has said that the improvement of £500,374 had been achieved, though £1,047,000 more than the previous year had been spent to meet increased salary and wage rates, and additional overtime payments, because of continuing staff shortages. The revenue for the year amounted to £36,239,000, and the goods carried reached a record of 10,819,000 tons. The record tonnage represented a 2·6 per cent increase on the previous year, and a 1·3 per cent increase on the earlier 1956 record.

PHILIPPINES

Increase in flat car order

The Manila Railroad Company is asking for bids on 300 more flat cars of 40-ton capacity to meet increased shipping demands caused chiefly by the increased quotas in the U.S.A. for Philippine sugar. The need for 200 cars had been announced earlier, so that the total requirement now stands at 500. The railway is asking that 200 of the flat cars be delivered before August 31 next, and the remaining 300 before October 31. Several sugar companies are reported to be helping in the financing of the new rolling-stock.

INDIA

Progress in electrification

Power was switched into the overhead electric line of the Asansol-Durgapur section of the Eastern Railway on March 31, the last day of the Second Five-Year-Plan period. Another electrification, 150 miles in length, is the group of lines comprising the Rajkharswan-Tata-Chakardharpore-Asansol sections of the South Eastern Railway; it is expected to be completed in June. Jamshedpur, Burnpur, and Durgapur will receive raw materials by electric trains.

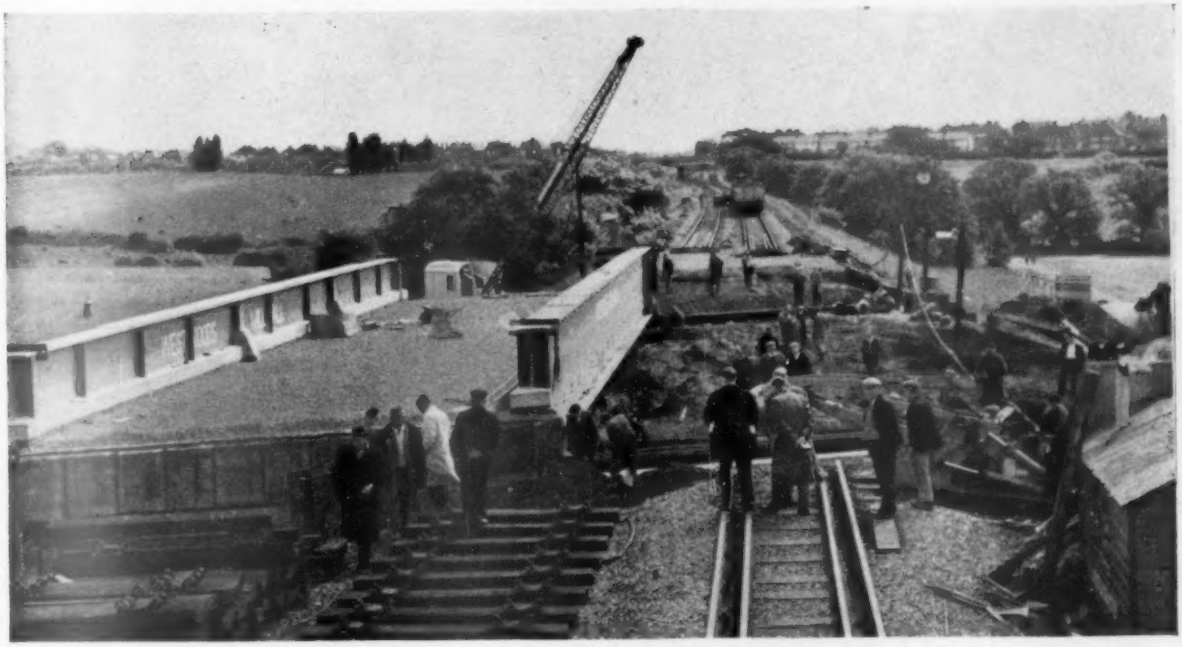
U.S.S.R.

Traffic plans for Moscow

Helicopters will be widely used, and there will be a four-fold increase in the length of the underground railways, in traffic plans for Moscow, which is determined not to share the conditions of western cities in which traffic is a chronic problem and speed of travel greatly reduced. The plans aim for about 80 per cent of all passengers to be carried by electric transport, especially by new monorails.

MECHANICAL WORKSHOPS PROGRESS ON E.A.R. & H.

New wagon shop at Nairobi, showing (left, foreground) roof for a locally-built insulated wagon. Please also refer to pages 653 and 654



Rolling-in Bridge 1001D for Colchester–Ardleigh fly-under

DIVE-UNDER BRIDGE near Colchester

Important stage in big improvement scheme provides 540-ton bridge over fly-under line now under construction

ON SUNDAY, May 28, the new 540-ton bridge (designated 1001D) carrying the main lines over the new fly-under in the Colchester–Ardleigh area of the Eastern Region of British Railways was rolled into position. The operation marked an important stage in an extensive scheme of improvement for the area. This covers the electrification of the "gap" between Chelmsford and Colchester, the construction of a single-track dive-under line for Clacton-bound trains; the complete reconstruction of Colchester Station, and major track alterations.

Faster trains

When complete the scheme will allow electric trains on the direct route between Liverpool Street, Clacton, and Walton-on-Naze to reach a speed of 90 m.p.h.

The 1,200-yd. long single-track dive-under line will enable Down Clacton trains to pass under the main lines and avoid conflicting train movements. More than 25,000 cu. yd. of filling material are being used to construct the embankment carrying this line. This maximum gradient will be 1-in-66 in readiness for a proposed link road between Colchester and Yarmouth. This will pass under the new line.

The bridge illustrated at the head of this article and on the next page was erected alongside a temporary structure which has carried main-line tracks over the partly-built dive-under line.

The new bridge is a heavily skewed, two-track structure comprising two welded-steel main girders and a deck of steel joists encased in concrete. Main girders with a span of 95 ft. and an overall length of 100 ft. are placed at 29-ft. centres. To facilitate construction of abutments and wing walls, way-beams were placed over the locations of the abutments, enabling the contractor to excavate in a trench under traffic. The concrete wing walls and abutments—each abutment supported by 40 piles—were then built, also under traffic.

Rolling-in

Before rolling-in was begun, a 35-ton steam crane removed the steel girders and timber supports and the bridge was supported near the ends of the girders on trolleys, which ran on large-diameter ball bearings. The whole structure was pulled in position by winches, the ball bearings under the trolleys running along a channel guide formed of bull-head rails located on top of the trestles and the concrete abutment.

The bridge was then jacked up and the rolling-in material was removed. Permanent bearings were inserted at each corner, and the bridge was lowered on these. After filling and consolidation at the rear of the abutments, the track on the bridge was connected to the main line. The whole of the "rolling-in" operation took 22 hr. The ground between the abutments can now be excavated to the required level for the laying-in of the track for the dive-under line.

Proposed link-road

By agreement with the highway authorities, the abutments for the proposed link-road bridge have already been constructed; the earthwork between the abutments will remain until the road is ready. At that time two more bridges will be required; one under the existing Clacton branch lines, the other under the main lines.

The whole of the work was carried out under the direction of Mr. A. K. Terris, Chief Civil Engineer, Eastern Region, British Railways. The fabrication of the steel girders was undertaken by Joseph Westwood & Co. Ltd., and the contractor was the Cementation Co. Ltd.

Operation of Tirfors Pulift

MODERNISATION IN THE EASTERN REGION

Dive-under bridge near Colchester

(Below): London end of temporary bridge

Eastern Region officers concerned in the project (left to right): Mr. R. L. Brydon, Chief Resident Engineer (Modernisation); Mr. K. E. Battle, Senior Resident Engineer; Mr. J. D. West, Assistant Civil Engineer (Modernisation); Mr. S. W. Saunders, Assistant Engineer (New Works)

(Above): View from fly-under site to Clacton join

Lifting rails on bridge during rolling-in operation

Aerial view of the railway mechanical workshops at Nairobi

MECHANICAL WORKSHOP PROGRESS on East African Railways

Modernisation under a five-year plan and improved production methods at Nairobi

SINCE 1956 a progressive programme of modernisation and improved production methods has been taking place in the East African Railways & Harbours Mechanical Workshops, Nairobi—East Africa's largest heavy industrial enterprise. The five-year plan is almost complete.

In the years after the war, to meet increasing traffic, many new locomotives, coaches and wagons were placed in service, representing an increase of some 55 per cent on the previously existing fleet. To deal with the maintenance problems created by these larger numbers it was necessary to extend some shops and also to build completely new shops.

The assistance of industrial consultants was sought and plans were prepared to reorganise and bring the workshops to a state of higher productivity. A production methods schedule, on which present-day techniques in the workshops are based, was also prepared.

In 1956 a start was made on the major structural alterations and by the end of that year the locomotive-weighing shop and the extension to the umbrella shed of the existing wagon shop had been completed. During 1957 construction of a new wagon shop was completed.

The next year saw the completion of the remodelling of the locomotive stores area and the building of a compressor house and by the end of 1959 a 100-ton locomotive traverser had been installed in the erecting and boiler shop and a foundry and pattern shop and a carriage and wagon smithy had been erected.

260-ton traverser

During 1960 a 260-ton locomotive traverser was installed between the machine shop and the boiler and erecting shops; the latter were extended and trackwork, new roads, storm water drainage and a water supply reticulation scheme were completed. Last year, also, an 11,000-V. distribution main was brought into use, linking the mains supply substation with a number of points in the workshops area.

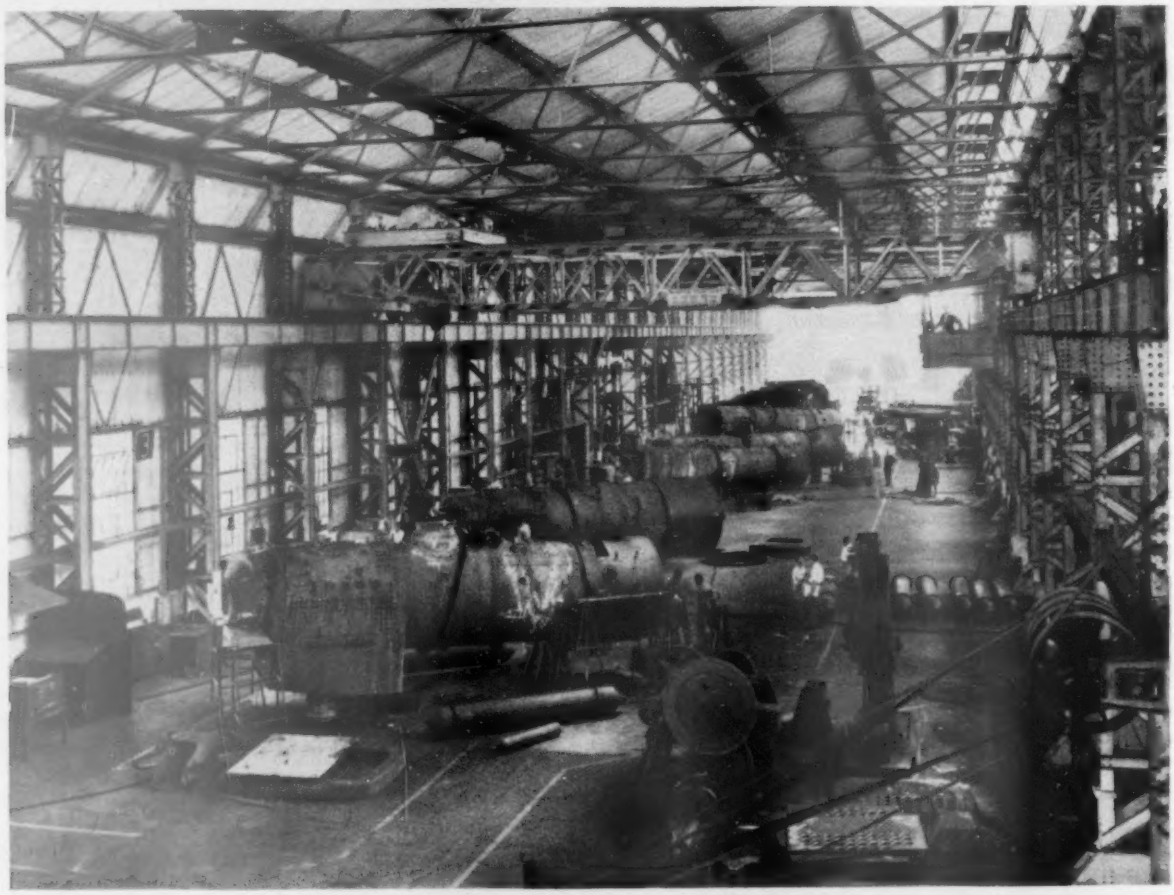
Upwards of £500,000 has been spent on building construction and new plant during the last five years and has resulted in a greatly increased output.

Increased productivity has not been achieved only by the incorporation of new methods but by instilling a better team-spirit into the staff. Initially there were problems. The new ideas meant many changes in thought on the part of the staff and also much rearrangement of their working schedules. Whereas, in the past, work was carried out on a more work-a-day basis, the new scheme was planned on production-line methods and each one of the 2,500 people employed

Fitting coupling rods in erecting shop

carriage and wagon shops productivity is also forging ahead. At present a goods wagon can be completely overhauled in 7 hr.—eight years ago it would have taken at least 70 hr.

The final phase of the extensions, which will shortly be completed, is in the carriage and wagon section where work is in hand on a new 12-bay lifting shop for coaches. Once this is completed, the five-year plan will be completed and there should be no need for further major works for many years.

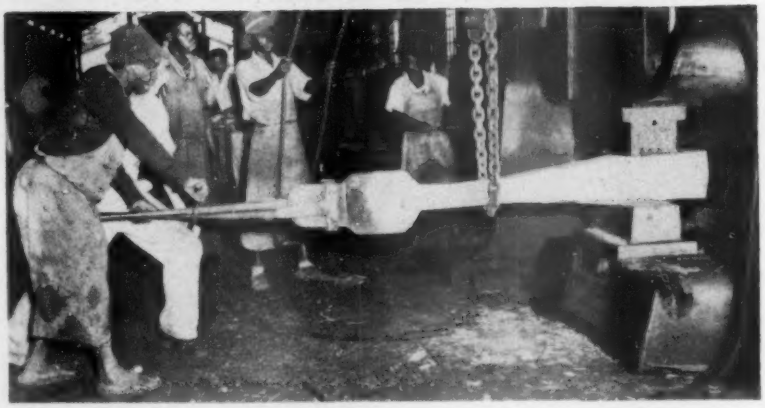


(*Above*) : *general view of boiler shop*

now has an integral part to play to ensure the smooth operation of the workshops.

The success of the new construction and methods is borne out by the fact that last year the workshops achieved a figure of 16·86 working days in shops for general repairs to a locomotive, including completely stripping the locomotive, effecting all necessary repairs and reassembling. A few years ago the figure was anything up to 36 days.

It is not only in the locomotive shops that improvements are apparent. In the



Forging a connecting rod in smithy

General view of frontage

FREIGHT TERMINAL AT STOKE-ON-TRENT in the London Midland Region

Improved facilities for sundries traffic are given by first new depot built under concentration plan

THE goods terminal at Stoke-on-Trent, the opening of which was recorded in our May 19 issue, and which cost some £750,000, is the first entirely new freight terminal to be built under the Region's freight concentration plan.

It is a concentration centre for sundries traffic to and from a wide surrounding area. It deals with forwarded and received consignments, and returned potteries' empties traffic, previously handled at Stoke-on-Trent, Hanley, Longport, Longton, Newcastle under Lyme, Leek, Stone, Congleton, and Stafford. In addition, the depot deals with received ale traffic and forwarded ale empties formerly dealt with at the first four of these stations.

Received cart road at the new depot

Consignments will be loaded in express freight trains to the depot, and delivered by road. Conversely, traffic for despatch from these areas will be collected by road vehicle, brought into the Stoke-on-Trent depot and despatched by rail. A fleet of road delivery vehicles operates from the depot; many vehicles are fitted with two-way radio telephone equipment.

Reduced intermediate handling

Concentrating the traffic at Stoke-on-Trent makes it possible to increase considerably the number of wagon loadings direct to destination and to reduce intermediate handling. There are daily loadings to and from approximately 100 depots dealing with miscellaneous sundries traffic and the new depot deals with close on 200 outgoing and 150 incoming wagons each day.

Coincident with the opening of the goods depot two full-load depots, one at Longport and the other at Longton, have been created to deal with collected

and delivered full-wagon-load traffic. The former depot at Stoke-on-Trent now becomes available to deal with traffic consigned under the export express freight service which was previously handled at Longport. Alterations are being made to the basement of the old goods shed at Stoke-on-Trent, and the bonded store at Hanley will be transferred to the new premises.

The Stoke depot extends over 17½ acres and consists of a shed covering both forwarded and received consignments, combined office and staff amenities block, weighbridge and nearly a mile of sidings. The shed is 460 ft. long and 404 ft. wide, over an area of some six acres. It is fitted with the latest mechanical-handling equipment, including two slat conveyors, each 400 ft. long, which travel at 40 ft. per min. An overhead travelling crane, mobile cranes and electric tractors for hauling internal trailers also contribute to the efficient handling of traffic.

WOOD AND PLASTIC PANELLING for railway carriages

Composite material combining the warmth and beauty of wood with the durability of melamine plastics

For beauty and elegance real wood panelling has remained unsurpassed for over 2,000 years. In the last decade, its use in new railway coaches has diminished to a considerable degree and wood panels have been replaced by the now familiar plastic laminates decorated by a man-made pattern printed on paper. This trend has not come about so much as a result of changing tastes but rather from the ease of installation and extreme durability of finish which are characteristics of plastic laminates.

Wood Veneer

The development of "Belfort" has been designed to combine the warmth and natural beauty of real wood with the durable properties associated with melamine plastics. Selected logs of choice timbers are cut into veneer on the quarter to reveal the maximum character and life of the wood and the sheets are then jointed up, impregnated with melamine resins, and pressed at high temperatures and pressures together with phenolic impregnated kraft papers. The process is very similar to that used in manufacturing printed paper laminates.

The resultant panels, 8 ft. x 4 ft. x $\frac{1}{16}$ in., enable real wood of the highest decorative quality to be applied without any subsequent finishing process, and to yield a durable surface many times harder than that obtained by any conventional polishing process. In this way, not only is considerable time and labour saved at the original installation but subsequent maintenance is greatly reduced.

Approved by British Railways

The use of "Belfort" has been approved by British Railways for the interior panelling of coaching stock where a natural timber finish is desired and conditions of service are appropriate. The material has already been used with success at Derby and Eastleigh Carriage Works and experimentally at Swindon.

The material can also be made to a thickness of $\frac{5}{32}$ in. using a hardboard core; this product, known as "Belfortboard," has successfully passed its use trials at Stratford.

All woods available

"Belfort" is available from stock in the five standard woods, sapele, makore, figured mahogany, afrormosia and figured limba, but it can be manufactured in virtually any species provided that the order is for a minimum quantity of 24 sheets.

A special service is operated for architects and designers, who can inspect veneers and receive test pressings within a short period of time. Further details relating to this service can be obtained from W. A. Bonnell (1924) Limited, 8, Westminster Palace Gardens, London, S.W.1.

Railway application of the laminates

Making the bonded laminates

PERSONAL

Overseas

MR. W. P. BOYD, A.M.I.C.E., A.M.N.Z.I.E., District Engineer, Wellington, New Zealand Government Railways, who has been appointed Inspecting Engineer (Civil), New Zealand Railways Department, joined the railway service, in 1925, as a civil engineering cadet at Dunedin. He transferred to the District Engineer's Office at Wanganui in 1929, and a year later became a draughtsman. In 1932, he went to Ohakune on the North Island Main Trunk Line. Mr. Boyd was transferred to Auckland in 1935, and, in 1938, was promoted to be Assistant Engineer, District Engineer's Office. After military service from 1942–45 he went to Hamilton where he became First Assistant Engineer, Resident Engineer's Office, in 1946. Mr. Boyd became Assistant District Civil Engineer, Wanganui, in 1951, District Engineer, Wanganui, in 1955, and District Engineer, Wellington, in 1958.

Mr. W. P. Boyd

MR. H. L. MCLEMAN, Investigating Accountant, Chief Accountant's Office, New Zealand Government Railways, who, as recorded in our December 23 issue, has been appointed Chief Accountant, joined the railway service as a clerical cadet at Christchurch in 1923. He was transferred the following year to the District Engineer's Office and later to the Traffic Branch. In 1941, Mr. McLeman was appointed Clerk (Statistics), Chief Accountants Office, Wellington, and the following year Assistant Workshops Accountant, Works Manager's Office, Lower Hutt. In 1944 he became Workshops Accountant, Otahuhu, and in 1950, transferred to Hutt Workshops in a similar capacity. In 1952, Mr. McLeman became Divisional Accountant, Chief Accountants Office, and in 1955 Investigating Accountant.

Mr. H. L. McLeman

MR. G. R. PEARSON, District Manager, Road Services Branch, Wellington, New Zealand Government Railways, who, as recorded in our December 23 issue, has been appointed Superintendent of Road Services, commenced his railway career as a clerical cadet at Christchurch, in 1924. He served in the South Island for some years and in 1934 transferred to Auckland. In 1934, Mr. Pearson transferred to the road services branch and became Assistant Manager of Road Services, Auckland, in 1951, and Assistant District Manager, in 1956. In 1958 he was appointed Administration Officer, Superintendent of Road Services Office, and a few months later, Transport Assistant. He was appointed District Manager, Road Services, Wellington, in 1959.

Mr. G. R. Pearson

MR. I. THOMAS, LL.B., A.M.INST. OF T., Chief Administration Officer, General Manager's Office, New Zealand Government Railways, who, as recorded in our issue of December 23, has been appointed Commercial Manager, began his railway career in Wellington as a cadet in 1929. He was appointed to the Land Office in the same year and later tock a degree of Bachelor of Law. He then transferred to the Law Office. Mr. Thomas later became Information Officer, then Administrative Assistant in the General Manager's Office, and introduced and managed the Rail-Air Service. Since 1951 Mr. Thomas has been Chief Administration Officer, General Manager's Office.

Mr. I. Thomas

Industrial

DR. JAMES TAYLOR, a Director of Imperial Chemical Industries Limited, has been appointed to the board of Pyrotenax Limited, in which I.C.I. holds an 18 per cent interest. He succeeds MR. M. J. S. CLAPHAM, who has resigned from the board, following his recent appointment to the main board of I.C.I. Limited.

MR. N. T. RADCLIFFE, Sales Director of the catering equipment division of Allied Ironfounders Limited, has been appointed a Director of the Falkirk Iron Co. Ltd., and of Allied Ironfounders (Stainless Steel Products) Limited.

MR. G. J. REDMOND has been appointed Secretary of Seddon Diesel Vehicles Limited, in succession to MR. H. REDMOND, who has resigned.

MR. J. S. A. BUNTING, formerly Joint Divisional General Manager, has been elected to the board of Associated Electrical Industries (Woolwich) Limited.

MR. W. F. OAKLEY has been elected Chairman of the Telecommunication Engineering & Manufacturing Association. MR. W. G. PATTERSON has been elected Vice-Chairman.

MR. J. M. ODDIE, Sales Director of Robert Hudson Limited, left England on June 3 for a visit to Canada and the United States.

MR. W. H. BATCHELOR, formerly Commercial Director of the Perry Barr Metal Co. Ltd., has been appointed to the board of Dartmouth Auto Castings Limited, Smethwick, as Commercial Director with effect from June 1.

MR. D. C. JARDINE has been appointed Senior Sales Engineer for telecommunications products, British Insulated Callender's Cables Limited, operating within the B.I.C.C. Home Sales organisation from 21, Bloomsbury Street, London, W.C.1.

MR. N. READMAN, Managing Director of the Consolidated Pneumatic Tool Co. Ltd., of London, has been elected President of the Chicago Pneumatic Tool Company, New York, to succeed MR. GUY J. COFFEY. Mr. Coffey becomes Chairman of the board in succession to MR. H. ARNOLD JACKSON who has retired, although remaining a Director & Chairman of the Executive Committee.

Transport Users' Consultative Committees

East Midland Area

MR. R. L. E. LAWRENCE, a nominee of the British Transport Commission, has been appointed a member of the Transport Users' Consultative Committee for the East Midland Area until May 31, 1962, in place of MR. A. J. JOHNSON. Mr. Lawrence is the Line Traffic Manager of the London Midland Region of British Railways at Derby.

North Western Area

MR. M. G. E. LAMBERT, a nominee of the British Transport Commission, has been appointed a Member of the Transport Users' Consultative Committee for the North Western Area until June 30, 1963, in place of MR. J. ROYSTON. Mr. Lambert is Line Traffic Manager, Manchester, British Railways, London Midland Region.

British Transport Commission

MR. J. W. KITCHEN has been appointed Goods Agent, Shipley, British Railways, North Eastern Region.

MR. N. FRANKLIN, Temporary Stationmaster, Gainford, North Eastern Region, British Railways, has been appointed stationmaster, Royston & Notton, also in charge of Notton & Royston.

MR. L. C. JOHNSON, Archivist, British Transport Commission, who, as recorded in our May 5 issue, has retired, was educated at Watford and joined the former L.N.W.R.

Mr. L. C. Johnson

in 1911. He passed through various sections of the Transfer Office and rose to become Head of the Department dealing with the registration of Scottish Trustees for purposes of Conveyance under Scots Law. Mr. Johnson was made Chief Clerk in December, 1944, Assistant Registrar in 1946, and Registrar in 1949. Mr. Johnson became the Archivist to the British Transport Commission in 1951.

MR. G. D. WILD, Mechanical & Electrical Engineering and Stores Account Assistant, Chief Accountant's Department, Swindon, British Railways, Western Region, who, as recorded in our April 14 issue, has been appointed Assistant Accountant, joined the former Great Western Railway in 1923. He served in the principal sections of the Chief Accountant's Office and then became Assistant to the Accountant (Civil & Signal Engineering). Mr. Wild was appointed Mechanical & Electrical and Stores Accounts Assistant in 1958, the position he has now vacated.

Mr. G. D. Wild

The London Transport Executive has announced the appointment of Divisional Superintendents in each of the three operating divisions of Central Road Services. The appointments, each of which carries the rank of Officer of the London Transport Executive, are as follow:—

MR. W. P. MORGAN, Divisional Superintendent (North) in the Department of the Operating Manager (Country Buses & Coaches), will become Divisional Superintendent (East).

MR. E. R. ELLEN, Acting Superintendent (Running), will become Divisional Superintendent (South).

MR. H. D. BATES, Assistant Divisional Superintendent (East), will become Divisional Superintendent (West).

These appointments all took effect from June 7. From the same date, MR. FLACK was transferred to the Operating Manager's headquarters at 55, Broadway, Westminster, and, pending his retirement in September, will cover the duties of the Superintendent (Running). This post was left vacant by the retirement of MR. J. H. GIFFIN at the end of last year.

Kent County Council Education Committee has re-appointed MR. GEORGE DODSON-WELLS, Chief Officer of British Transport Advertising, a Governor of the Bromley College of Art for a further three-year term.

MR. B. J. PILKINGTON, Assistant District Operating Superintendent, Piccadilly (Manchester), London Midland Region, British Railways, retired on May 31, after 49 years' service. Mr. Pilkington entered the railway service as a Junior Clerk at Stockport in February, 1912. He was appointed Assistant to the District Operating Manager, Liverpool (Lime Street), in July, 1947, and to his present position in September of that year. On several occasions during his career Mr. Pilkington made arrangements for the Royal Train and during recent years has been responsible for many of the special arrangements required in connection with the modernisation and electrification of the Manchester-Crewe line.

Institute of Traffic Administration

The Institute of Traffic Administration has announced its officers for the year 1961-62 as follow:—

President:—LORD MERRIVALE of Walkhampton.

Vice-Presidents: MR. R. P. BOWYER, MR. A. LAWES COLE, MR. L. C. HARRISON, MR. C. J. PARKER, MR. B. R. MILLER, MR. F. N. WHITE, MR. TOM JACKSON, MR. J. FOLEY EGGINGTON, MR. T. J. D. MORRIS, MR. ALEX MACNAIR, MR. A. T. HILLS.

Past Chairman of the Council: MR. W. LINDLEY.

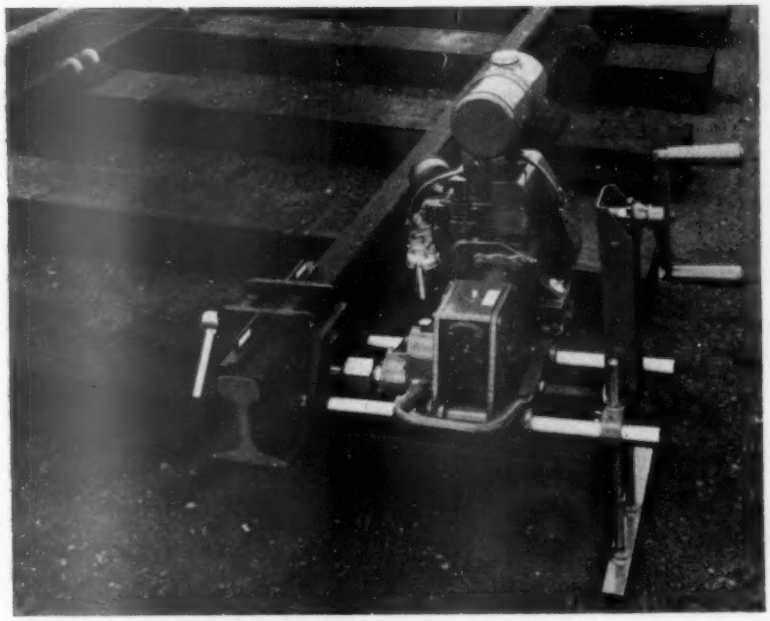
Chairman of the National Council: MR. K. J. P. BOWYER.

Vice-Chairman of the Council: MR. W. DALE, MR. J. L. AUSTIN.

Hon. Treasurer: MR. L. C. HARRISON.

Editor of Institute's Journal: MR. C. J. PARKER.

NEW EQUIPMENT *and Processes*



RAIL-DRILLING MACHINE

This compact and portable machine can be readily and quickly set on the rail ready for drilling.

For use on British Railways the over-rail clamp incorporates a locating jig for accurate vertical positioning of the drill bit, which jig is interchangeable and available for 95 lb. BH, 98 lb. FB, 109 lb. FB, or rail section as required.

A lateral gauge is also fitted which when aligned up with the end face of the rail enables the first hole to be drilled at the correct distance of 2⅜ in. from rail end. The drilling of the second hole, at 4½ in. and 5 in. centres respectively for BH and FB rails, is likewise obtained by sliding the machine along and repeating the lining up of the gauge with the rail end.

Rigidity of the machine when drilling is ensured by the provision at the rear of a stabiliser (adjustable vertically and laterally), which can be set to rest on the sleepers, ballast, or ground level as desired. A feature is that the machine will drill a rail lying on the ground without packing up the rail.

A similar machine without locating jigs, but provided with height adjustment facilities for drilling varying rail sections, is offered for overseas railways.

The machine is powered by a Villiers 125 c.c. four-stroke petrol engine.

Further details may be obtained from Abtus Limited, Vandon Court, Petty France, Westminster, London, S.W.1.

HYDROSTATIC LUBRICATOR

The "Eureka N" lubricator has provision to ensure the fullest hydrostatic head and is said to meet all lubrication requirements where extremes of weather are encountered.

As will be seen from the illustration this lubricator is now available with a fabricated body. Two sizes of the fabricated type are available, a four-feed one having a capacity of five pints, and a five-feed model containing six pints. In the latter size the centre feed can be controlled independently of the other feeds, which makes it suitable for the lubrication of Westinghouse pumps and other steam operated brakes, as well as for mechanical stokers.

The South African Railways has recently placed an order for 650 "Eureka N" lubricators, 100 of which are fabricated.

Full particulars are available from Castrol Industrial Limited, Castrol House, Marylebone Road, London, N.W.1.

CUTTING-OFF MACHINE

An Italian-made high-speed cutting-off machine has been placed on the British market. This is said to produce clean square cuts without work-hardening through overheating. It will handle material up to 2½ in. dia., at 90 or 45 deg.

Cutting speed is 132/265 ft./min.

For mitre cutting the head, not the vice, rotates. This eliminates the need to provide space to swing long work-pieces to the required angle.

The spindle runs in tapered roller bearings. Drive to the high-speed blade is through a gearbox.

The machine is supplied with electrical equipment suitable for 400/440/3/50 supply.

Space required is 26 in. x 26 in. x 22 in. Total weight is 265 lb.

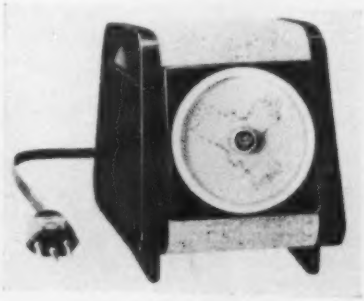
Further particulars are obtainable from Soag Machine Tools Limited, Juxon Street, London, S.E.11.

RECORDERS

The Elmes range of miniature cyclogram recorders has been introduced for measuring current, voltage, temperature, also other parameters by using transducers.

The recorders are inkless, extremely sensitive (down to 10uA) and small enough to enable nine separate instruments to be incorporated in a 12 in. square.

Further details may be obtained from Hasler Telegraph Works Limited, 26 Victoria Street, London, S.W.1.



FORKLIFT TRUCK

The forklift truck illustrated incorporates good manœuvrability, wide stability and ease of handling. Features are the turning radius, of 10 ft. 2 in. (with the power steering on full lock), twin tyres 7·50 in. x 20·00 in., and wheel base of 7 ft. 6 in.

The torque converter (with a 3: 1 ratio) and multi-speed power-shift transmission are said to give high acceleration, speed of movement, and finger-tip control.

Lifting capacity is 4½ tons at 2 ft. load centre. Lifting heights available are 9 ft., 12 ft., or 16 ft. The mast tilt is 3 deg. forward and 10 deg. backward.

Power is obtained from a Ford 62 h.p. engine, which gives a lift speed of 60 ft. a minute unloaded and 50 ft. loaded. Travel speeds are 0-11 m.p.h. in forward top, 0-5·5 m.p.h. in forward bottom gear, and 0-6 m.p.h. in reverse. Ground clearance is 9 in. below the body and 6½ in. under the mast.

Length overall, less forks, is 11 ft. 9 in., width 6 ft. 7 in., and height 7 ft. 3 in. in the case of the 9 ft. lift model.

Unladen, the weight is about 5¾ tons.

Full particulars are obtainable from Matbro Limited, Horley, Surrey.

FLOW INDICATORS

The Muntz flow indicator, originally developed for use on the lubricating system of free-piston engines, is now available to users and manufacturers of diesel engines, turbines, and other equipment requiring controlled lubrication. This results from an agreement concluded by Alan Muntz & Co. Ltd. with M. Falk & Co. Ltd., whereby that company will handle distribution in all countries outside the United Kingdom, France excepted.

The Muntz direct flow indicator has been developed to overcome the difficulty of indicating small flows when additive-oils are present. The indicator consists of a ball in a transparent tube with a tapered bore, so arranged that as the flow increases the ball rises in the tube. An indication of the actual flow rate is thereby obtained.

This compact and easily-read device is available in different forms, varying from those applicable to one oil line to those for large oil-circulating systems where the required number of indicators may be grouped together in one panel.

Pressures up to 1,000 lb. sq. in. can be handled.

Fitting presents no problems and all components are interchangeable.

In addition to indicating flows of liquids those of air or gases can be recorded.

Further information is available from the distributors at Bell Street, Reigate, Surrey.

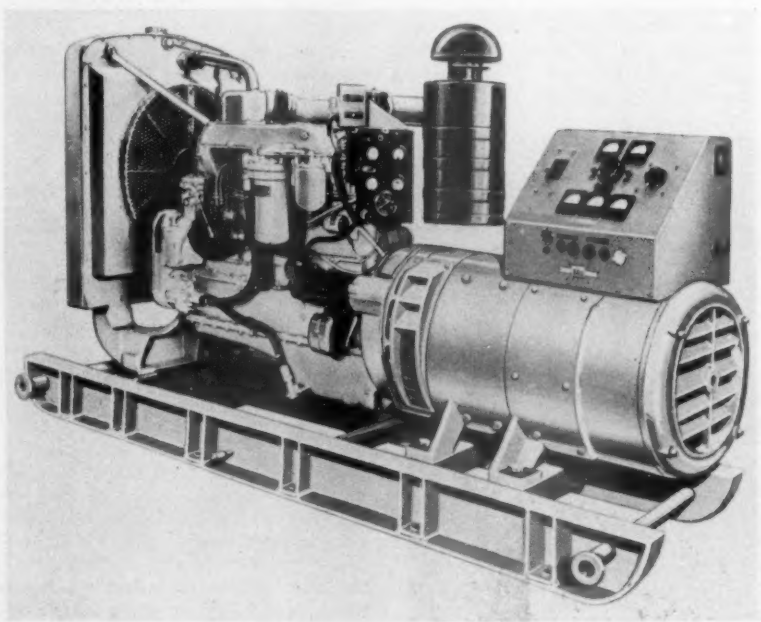
GENERATING SETS

Production has commenced of a new range of portable generating sets, intended to provide either a sole supply or as a protection against the failure of the mains network.

Known as the " Empress " range, and incorporating British-built Cummins diesel engines, these sets will have outputs extending from 68 to 212 kVA, at 50 or 60 cycles. Weights vary from 1 ton 18 cwt. to 3 tons 5 cwt.

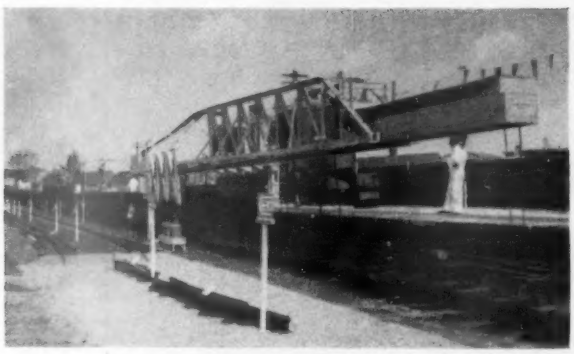
The manufacturing agreement concluded by the engine builders and producers of the sets means that the service facilities of both concerns are available to users. It is announced that both companies are continuing a development programme directed towards the special requirements of the generating set industry.

Additional information is obtainable from Dale Electric (Yorkshire) Limited, Filey, Yorkshire.

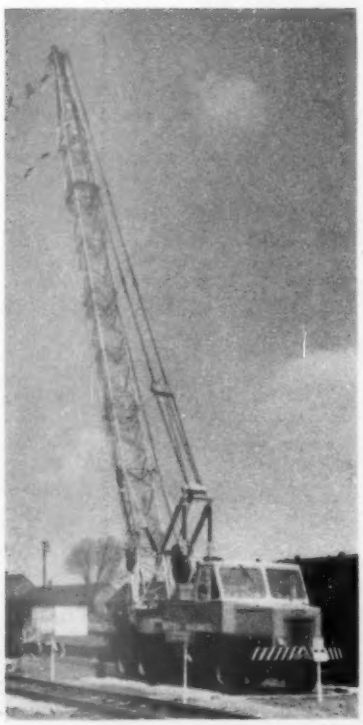


PLANT AND MACHINERY EXHIBITION at Ponteland

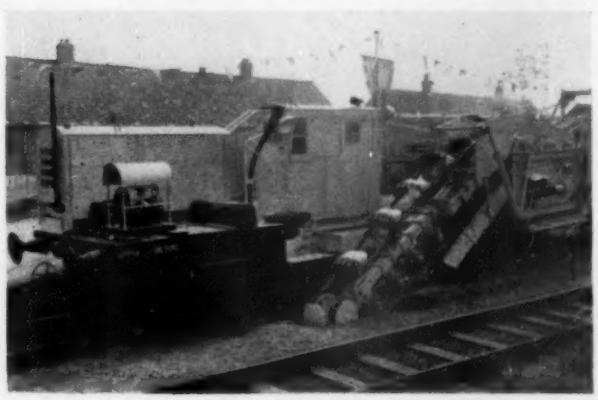
Opening ceremony



Single-line tracklayer



Lorry-mounted crane



Rail-mounted trencher

SEVENTY of the latest machines for track laying, earth moving, and permanent way maintenance were displayed at an exhibition held at Ponteland, in the North Eastern Region of British Railways, from May 30–June 5.

This exhibition, which was opened by Mr. E. L. Triffitt, Chief Civil Engineer, N.E. Region, was staged by the Region as part of Commonwealth Training Week, and also for the benefit of delegates attending the Annual Conference of the Permanent Way Institution at Newcastle. Five hundred people, many of them students from Newcastle, attended the official opening.

Mr. Triffitt, in a brief introductory speech, expressed the hope that the exhibition would give the public an opportunity to see an aspect of railway civil engineering with which they were not ordinarily acquainted. The mechanism of railway civil engineering, he said, had largely developed since the war. The machines and plant on view were representative of those at present in use. Some, as will be seen from the illustrations, were of conventional types, but many were specialised units designed solely for railway requirements. Some of the prototypes displayed were on show for the first time. Also on view were many items of conventional equipment used on general contracting work.

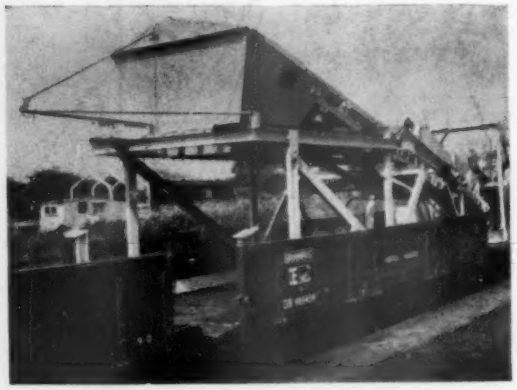
Among the lesser-known equipment was a mobile soil-

mechanics laboratory, switch-heaters, mechanical equipment for pointing masonry or brickwork, and a culvert cleaner.

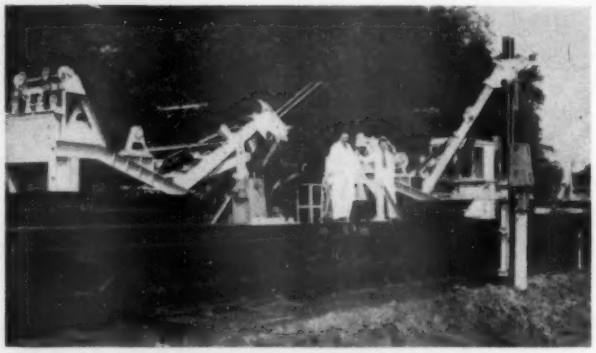
The saw trolley, illustrated, is used in conjunction with the single-line track layer to cut sleepers in position in the track to a standard 8 ft. 5 in. length. It is self-propelled and has a capacity of 400 yards an hour.

Referring to Commonwealth Technical Training week, Mr. Triffitt briefly outlined B.R. training schemes for technical staff, which he explained were well established and fully co-ordinated to suit the needs of new entrants from the universities, public and grammar schools, and technical schools. There were many opportunities in the technical field for young men joining the railway service.

During the exhibition some of the machines were seen in operation. Colour films were shown in a cinema coach, and there was also a display coach, in which some of the modernisation works being carried in the N.E. Region were explained by plans and pictures.

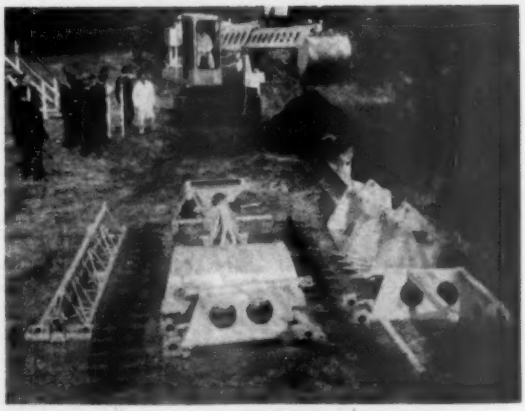


End-on loading equipment



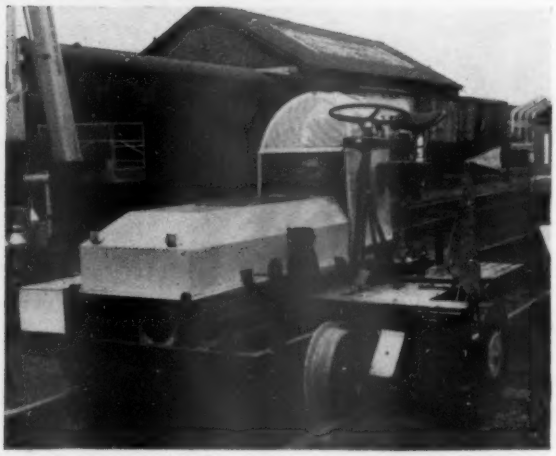
Cable-duct piling machine

Six-foot and shoulder ballast cleaner



Lorry-mounted excavator

Ballast-tamping machine



Saw trolley

Dr. Beeching's message to railway staff

Dr. R. Beeching, the new Chairman of the British Transport Commission, who will become chairman of the new British Railways Board when it is set up, has sent the following message to all British Railways staff:

"I have come to join you at a time of difficulty, and I have come to help. I hope this will become apparent, even though it may be necessary to do some things which will not be easy to accept.

"Make no mistake, the whole future of the railways will be decided by what happens in the next few years. This great organisation, publicly owned and depending for its continuance upon further large expenditures of public money, must regain the full confidence and sympathy of the nation.

"To satisfy the public, and ourselves, we must improve our services and we must make them pay. Modernisation is essential for both of these purposes, but results will not be achieved by modernisation alone.

"The formation and execution of plans which will lead to recovery from the present position will demand all the skill of the best management team that can be assembled. We cannot succeed without wise planning, but, even if the plans are good, success will still depend upon the skill, self-discipline, and good sense of staff at all levels. A greater display of these qualities, which I know to exist, will lead to big improvements at once, while plans take time to have their effect.

"As things improve—and with your help they will improve quickly—the smouldering pride of the railwayman will shine out brightly once more."

Locomotive engineers visit Sentinel Works

Over 100 members and guests of the Midland section of the Institution of Locomotive Engineers visited the Sentinel Works, Shrewsbury, on May 31. Members were received for lunch by Mr. W. A. Robotham, Managing Director of the Rolls-Royce Oil Engine Division.

Locomotive production at these works consists of the recently introduced Sentinel 0–4–0 and 0–6–0 diesel-hydraulic industrial shunters. This range is being extended by the introduction of an 0–8–0 model later this year. With the exception of the production of diesel-hydraulic shunters, the whole of the works, with a labour force of approximately 2,000, is now employed in the production of four, six, and eight cylinder "C" type oil engines.

A substantial proportion of these are being supplied for rail traction and exhibits of Rolls-Royce-powered equipment on view included Craven railcars for British Railways, Sentinel 0–4–0 and 0–6–0 shunters, Yorkshire Engine Co. Ltd., 300 h.p. shunter, and the twin-engined Taurus with differential transmission. It was stated that a prototype locomotive is now under construction in which a differential transmission is used to combine four engines. This will extend the range of Rolls-Royce-powered locomotives to 1,500 h.p.

Other exhibits on view were Rolls-Royce/Twin Disc torque converters, a final drive unit, a Foden dumper, a crawler tractor, a compressor set, a generating set, and marine units.

Rolls-Royce apprentice training centre

An apprentice training centre, equipped and staffed to provide comprehensive engineering training for 100 of the apprentices at the Rolls-Royce Oil Engine Division factory at Shrewsbury, was officially opened on June 2 by Lord Hives, a former Chairman of the company. Covering an area of 12,000 sq. ft., the centre will provide a basic training for all types of apprentices and a later period of specialised training for machinists, draughtsmen and technicians.

The company's training scheme, based on a trainee strength of 250, is designed to provide practical and academic training for school leavers which will enable them to take their places in industry as skilled craftsmen and technicians, and to allow young people of ability to attain professional status in technical, commercial and administrative fields.

The basic period, normally one year, is followed by works training in various departments to provide a sound background for later specialisation. After the second phase, machinists return to the training centre for advanced instruction, and draughtsmen and technicians return to the drawing office training school. The school also provides instruction for the appropriate grades in engine stripping and assembly.

Academic instruction proceeds on parallel lines with works training, and a development in this connection is the introduction of a block release system for craft apprentices. With this system the present arrangement of one day a week release for technical college attendance will be replaced by two periods of continuous attendance for six weeks in the year. The technical training provided covers the City and Guilds and National Certificate examinations. Students of exceptional ability are recommended for advanced technological training, and four of the Company's apprentices have been awarded State Scholarships to enable them to attend full-time university courses.

The layout and equipment of the centre for basic training is arranged for instruction and practice in turning, milling, grinding, sheet-metal work, and general engineering. This instruction is given on new machines of the latest types. A particular feature of interest is that this basic training is common for all trainees, which includes craft, drawing office, laboratory, commercial and graduate entrants.

Also incorporated in the new training centre is a section for the investigation and development of new production techniques and new types of machine tools.

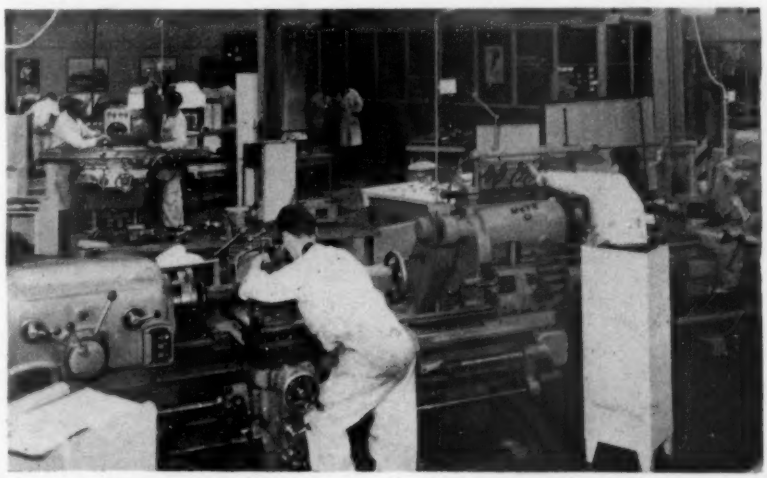
Railway signal engineers in France

The Annual Summer Convention of the Institution of Railway Signal Engineers was held this year in France. Through the generous help and co-operation of the S.N.C.F. some 175 members of the Institution and their ladies, under the leadership of the President, Mr. F. G. Hathaway, were enabled to make a comprehensive tour. The adoption of the 25,000-V., 50-cycle a.c. system of traction in Great Britain gave an added interest to these journeys, which were made over some French lines newly equipped with the same system.

Leaving London on May 24, the party travelled via Paris to Dijon and returned to Paris for visits to marshalling yards at the Gare du Nord, the St. Ouen signalling laboratory, and to the training school of the S.N.C.F.

At Dole the party saw switching arrangements on the overhead line whereby the changeover was made from 1,500 d.c. traction to 25,000-V. a.c. and the special signalling interlocked with the traction system. The signalling on this section of line has been changed from double to single track, thereby reducing the cost of track maintenance, yet has had its carrying capacity increased by the installation of electronic C.T.C.

Accompanying the party on technical visits was M. Walter, Ingenieur en Chef à la Direction des Installations Fixes, himself a member of the Institution. On visits to the South Eastern Region the party was also accompanied by M. Legrand, Chef du



The advanced school in the Rolls-Royce apprentice training centre at Shrewsbury

Service de la Voie et des Bâtiments de la Région du Sud-Est., and other members of the staff of the S.N.C.F. Help and guidance was also given by staff of Cie des Signaux et Enterprises Electriques; Saxby; and Société des Telecommunications Radio-electriques et Telephoniques, and of the Société Aster.

Area Board meets T.U.C.C.

The Chairman, Colonel D. H. Cameron of Lochiel, and Members of the Scottish Area Board of the British Transport Commission, together with Mr. James Ness, General Manager, Scottish Region, British Railways, had an informal meeting with the Chairman, Sir John Banks, and Members of the Transport Users' Consultative Committee for Scotland in Edinburgh on the evening of June 1.

Dinner was preceded by a film and a talk given by Mr. S. E. Raymond, Assistant General Manager (Traffic), Scottish Region, British Railways, on railway developments in Scotland.

The function was one of a series arranged by the Scottish Area Board to bring local authorities, traders' organisations and other public bodies into closer touch with the higher management of the railways and to let them know how modernisation is proceeding.

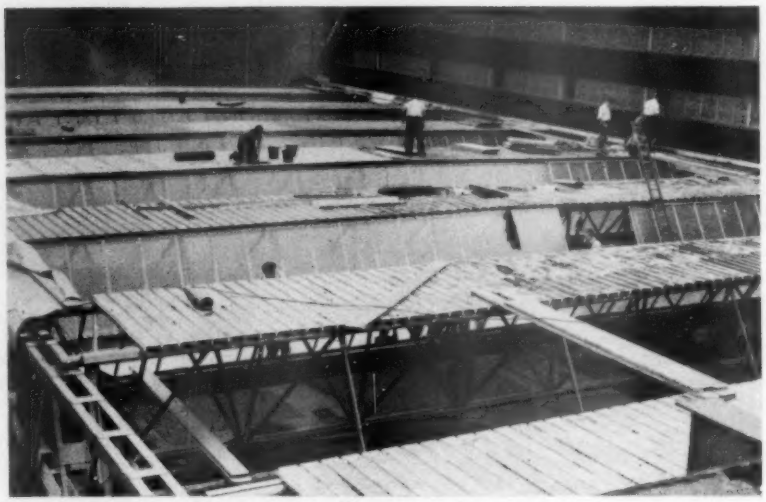
Reconstruction of Manchester Piccadilly Station

The illustration on this page shows the Ruberoid insulated steel-deck roof being installed at Manchester Piccadilly Station (previously London Road Station). Under extensive reconstruction, this station now has a new concourse. The Ruberoid specification consists of Type "D" Ruberoid insulated steel-deck roofing with ½-in. fibreboard insulation, two layers of Astos asbestos roofing, and a layer of green mineral-surfaced Ruberoid roofing.

To avoid constant bottlenecks, all platforms have been lengthened and straightened. The original main block at the front of the station is being demolished and a new frontage, and nine-storey office block is being erected.

The work on the platforms has included reconstruction of the roofs and has necessitated new sheeting and glazing at both ends. For this, Ruberoid galvanised steel deck has been used.

All the work is being carried out under the direction of Mr. A. N. Butland, Chief Civil Engineer, London Midland Region. The Architect is Mr. W. R. Headley, and the main contractor is William Townson & Sons Ltd., of Bolton.

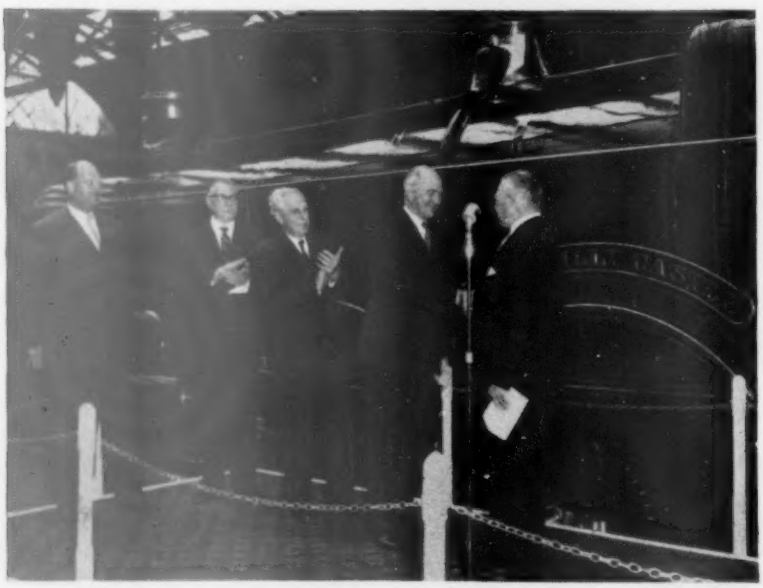


Installing the Ruberoid insulated steel-deck roof at Manchester Piccadilly Station

Handing-over ceremony

Illustrated below is the handing-over ceremony referred to in our editorial columns.

Seen in the illustration, from left to right, are Dr. R. Beeching, Chairman, British Transport Commission; Mr. John Ryan, Member, Western Area Board; Dr. P. Dunsheath, Ministry of Education; Dr. D. H. Follett, Director, Science Museum; and Mr. R. F. Hanks, Chairman, Western Area Board.



Handing-over ceremony, at Paddington, of No. 4073 "*Caerphilly Castle*"

Questions in Parliament

Tenders for Railways in East Africa

Lt.-Colonel Sir Walter Bromley-Davenport (Knutsford—Con.) asked the President of the Board of Trade on June 1, with regard to the notice in the Export Service Bulletin of April 10, about tenders invited by the Ports Railways Transport Department of Portuguese East Africa, why there was a delay of three weeks in supplying his department's list of 40 firms willing to submit tenders on behalf of British manufacturers. He also asked if he was aware that the list included firms not in a position to submit tenders, and whether he would ensure that full and early details were given to inquiries about matters of such importance to United Kingdom export trade.

Mr. F. J. Erroll, Minister of State, Board of Trade, said that his department had special arrangements for dealing with enquiries about tenders which normally work entirely satisfactorily and expeditiously. The delay in this particular case, which was regretted, was due to an unfortunate series of human errors. The list supplied by his department made it quite clear that it was a list of firms qualified to tender, but that some of the firms listed might be unable to do so because of other commitments. These would not normally be known either to the department or to the Commercial Officer at the overseas post.

Parliamentary Notes

M.P.s' thanks to Sir Brian Robertson

Mr. Martin Lindsay (Solihull—C.), Mr. W. Deedes (Ashford—C.), Mr. Leslie Thomas (Canterbury—C.) and Mr. Ronald Bell (Buckinghamshire S—N.L.C.) were the sponsors of a Motion tabled in the House of Commons on May 31, as follows:—

"That this House places on record its appreciation of the painstaking manner in

which General Sir Brian Robertson discharged his responsibilities as Chairman of the British Transport Commission towards Members of Parliament who have approached him on behalf of their constituents over a period of seven-and-a-half years, and records its grateful thanks."

Mr. A. Forbes Hendry (Aberdeenshire W.—U.) and Mr. H. Hynd (Accrington—Lab.) added their names as sponsors on June 1, and as signed supporters Sir Leslie Plummer (Deptford—Lab.), Lt.-Commander Stephen Maydon (Wells—C.), Mr. Rupert Speir (Hexham—C.), Mr. A. P. Costain (Folkestone and Hythe—C.), and Sir Wavell (Wakefield—C.).

Mr. Raymond (Gower, Barry—C.) placed on the Order Paper as a substantive Motion: "That this House places on record its appreciation of the devoted services of Sir Brian Robertson as Chairman of the British Transport Commission during the past seven-and-a-half years in the face of many difficulties; and expresses its appreciation of the painstaking manner in which he discharged his responsibilities towards Members of Parliament who have approached him; and records its grateful thanks."

Both Motions will remain on the House of Commons Order Paper so long as fresh names are being added. They are in the nature of individual Members' appreciation, apart from that expressed by the Minister of Transport and other M.P.s when the appointment of his successor had been announced.

Staff & Labour Matters

Motor drivers' dissatisfaction

It is reported that motor drivers in the employ of British Railways are dissatisfied with their existing rates of pay. These rates were agreed between the Commission and the N.U.R. following the issue of the Guillebaud Report, but the men contend that their rates are low in comparison with those paid by outside firms. Preliminary discussions have taken place between the N.U.R. and the Commission. At certain centres the men have threatened to withdraw their labour as from June 11 for a week, if their claim for improved rates of pay is not conceded.

CONTRACTS & TENDERS

British Railways, London Midland Region, has placed the following contracts:—

Sir Alfred McAlpine & Sons Ltd.: reconstruction of Tamworth Station in connection with the London Midland Region modernisation and electrification scheme

The Butterley Co. Ltd.: supply, fabrication and delivery of steelwork for bridge No. 81 on the Roade-Rugby line

P. & W. MacLellan Limited: supply, fabrication and delivery of steelwork for bridge No. 11 on the Leicester-Trent line

R. G. Horton (Engineers) Limited: addendum for demolition and reconstruction of parapet walls at Chester General Station

The Trinidad Lake Asphalte Company: platform surfacing at Chester General Station

The Demolition & Construction Co. Ltd.: demolition of chimney shaft and sundry works at Shore Road Power Station, Birkenhead

Escay Fencing Contractors Limited: renewal of fences on electrification routes in the Liverpool and Manchester districts

Supreme Fencing Limited: fencing renewal programme in the Blackburn district.

British Railways, Southern Region, has placed the following contracts:—

Bective Electrical Co. Ltd.: electrical installations at Victoria Parnell House

Johnson Bros. (Aylesford) Ltd.: road works at Staplehurst

Clark & Fenn Limited: repairs to concrete walls and parapets, to Brunswick Yard, Nine Elms

James Robb & Son Ltd.: cleaning and painting of Meldon Viaduct, Okehampton

Aubrey Watson Limited: period contract for building and civil engineering works in the London Area (East)

Aubrey Watson Limited: period contract for building and civil engineering works in the London Area (West)

R. Corben & Son Ltd.: period contract for building and civil engineering works in the Ashford Area "A"

R. Corben & Son Ltd.: period contract for building and civil engineering works in the Ashford Area "B"

G. J. Furneaux Limited: period contract for building and civil engineering works in the Eastleigh Area "A"

G. E. Prince & Son Ltd.: period contract for building and civil engineering works in the Eastleigh Area "B"

A. J. Dunning & Sons (Weyhill) Ltd.: period contract for building and civil engineering works in the Eastleigh Area "C"

W. & J. Glossop Limited: resurfacing and surface dressing of roads, footpaths and platforms in the Exeter district

The Cleveland Bridge & Engineering Co. Ltd.: reconstruction of Knatchbull road bridge, Elephant & Castle

Durable Asphalte Co. Ltd.: repairs to platform roofs at Vauxhall Station

W. R. Payne & Sons Ltd.: station renovations at Ore

P. & M. Contractors Limited: station renovations at Tonbridge

W. Latimer & Co. Ltd.: cleaning and painting of inner dock gate in the Dover train ferry dock

John E. Wiltshier & Co. Ltd.: repairs and improvements to Sittingbourne Station

A. C. W. Hobman & Co. Ltd.: resurfacing and surface dressing of roads, footpaths and platforms in the Brighton District

Val de Travers Asphalte Limited: resurfacing and surface dressing of roads, footpaths and platforms in the Eastleigh District.

British Railways, Scottish Region, has placed the following contracts:

Noble & Lund Limited: reconditioning of Noble Lund wheel lathe at Cowlairs Works, Glasgow

Jas. Young (Contractors) Limited: reconstruction of Newton overbridge No. 42, Westburn Road, between Newton and Uddingston

Jas. Miller & Partners Limited: erection of various buildings at Millerhill new marshalling yard, Edinburgh

Webster & Bannerman & Co. Ltd.: reconstruction of overbridge No. 96 Neilston High, in connection with the Glasgow suburban electrification

P. & W. MacLellan Ltd.: renewal of footbridge No. 11B, Mount Florida, in connection with the Glasgow suburban electrification.

The Export Services Branch, Board of Trade, has received calls for tenders as follow:—

From Burma:

1. 5 sets two-axle diesel railbus with control trailer, i.e., one powered car and one control trailer
2. Lot spare parts for the above railbus sets.

The issuing authority is the Chairman, Union of Burma Railway Board, Bogyoke Aung San Street, Rangoon, to whom bids should be sent. The closing date is July 14, 1961. The Board of Trade reference is ESB/15479/61.

From Ceylon:

80 lb. steel flat bottom railway rails and fastenings.

The issuing authority is the Ministry of Transport & Works, Colombo. Firms interested in this call for tenders should get in touch with the Crown Agents for Overseas Governments & Administrations, 4, Millbank, London, S.W.1, who are acting as purchasing agents. Reference No. EC3/Ceylon Railway 3365 should be quoted. The closing date is July 26, 1961. The Board of Trade reference is ESB/15225/61.

From Greece:

1,400 r.m. eternit pipes, No. 100, 4 in.
20 r.m. eternit pipes, No. 80, 3 in.
10 r.m. eternit pipes, No. 50, 2 in.

The issuing authority is the Purchasing & Stores Department, Hellenic State Railways (SEK), 34 Themistocleous Street, Athens, to which bids should be sent. The tender No. is 5082. The closing date is June 9, 1961. Local representation is essential. The Board of Trade reference is ESB/17862/61.

1 rectifier for batteries charging, of three-phase Selenium, 380 V., three charging lines, current voltage 24-40 V. Charging intensity regulation range from 5-60 A. by means of charging intensity regulators per 2A. Regulation by hand lever.

The issuing authority is the Purchasing & Stores Department, Hellenic State Railways (SEK), 34 Themistocleous Street, Athens, to which bids should be sent. The tender No. is 5068. The closing date is June 16, 1961. The Board of Trade reference is ESB/17861/61.

From India:

Traction sub-stations and switching stations for railway electrification on the 25 kV., 50 cycle, single-phase a.c. system on the Tambaram-Villupuram section of the Southern Railway.

The issuing authority is the General

Manager and Chief Engineer, Railway Electrification (Ministry of Railways, Government of India), to whom bids should be sent. The closing date is August 16, 1961. The Board of Trade reference is ESB/16882/61.

From Iraq:

2,000 steel mild sheets plain galvanised with a spelter coating of 2½ oz. per sq. ft. or nearest size 6 ft. x 3 ft. x 1/32

2,000 steel mild sheets corrugated galvanised with a heavy spelter coating of app. 1½ oz. per sq. ft. on each side size 5 ft. x 2 ft. 8 in. x 22 gauge

2,000 steel mild sheets corrugated galvanised size 9 ft. x 2 ft. 8 in. x 22 gauge.

The issuing authority is the Office of the Director General, Iraqi Republican Railways, Baghdad, to which bids should be sent. The closing date is July 2, 1961. The Board of Trade reference is ESB/17473/61.

From Pakistan :

4,000 spring hangers, complete with swivel, washers, nuts and check nuts, as per drawing.

The issuing authority is the Chief Controller of Stores, Pakistan Eastern Railway, Pahartali, Chittagong, to whom bids should be sent. The tender No. is P5/EB1/72/60. The closing date is June 14, 1961. Local representation is considered desirable. The Board of Trade reference is ESB/17423/61.

9 centrifugal oil purifiers of 15 GPH capacity for removing water and other impurities from diesel fuel oil. The purifier shall be of portable type, complete with electric motor, starter, heater, pump, oil de-aerating tank, metallic flexible hose connections on the suction and delivery sides, etc., and suitable for operation on 230 V. 50 cycle a.c. supply; standard set of spares shall be supplied with each machine.

The issuing authority is the Chief Controller of Stores, Pakistan Eastern Railway, Pahartali, Chittagong, to whom bids should be sent. The tender No. is P3/HA/30/61. The closing date is July 10, 1961. Local representation is considered desirable. The Board of Trade reference is ESB/17420/61.

2 deep well turbine pumping sets, a.c. motor driven as per specification No. EB/EE/25A.

The issuing authority is the Chief Controller of Stores, Pakistan Eastern Railway, Pahartali, Chittagong, to whom bids should be sent. The tender No. is P3/HA/26/61. The closing date is June 19, 1961. Local representation is considered desirable. The Board of Trade reference is ESB/17426/61.

2 diesel engine driven generating sets, 10 kW.

1 diesel engine driven generating set, 20 kW.

The issuing authority is the Chief Controller of Stores, Pakistan Eastern Railway, Pahartali, Chittagong, to whom bids should be sent. The tender No. is P3/HA/62/60. The closing date is July 10, 1961. Local representation is considered desirable. The Board of Trade reference is ESB/17425/61.

150 couplings Kent 5 way, complete with junction boxes, plugs and sockets

The issuing authority is the Chief Controller of Stores, Pakistan Eastern Railway, Pahartali, Chittagong, to whom bids should be sent. The tender No. is P3/HB2/21/61. The closing date is June 20, 1961. Local representation is considered desirable. The Board of Trade reference is ESB/17419/61.

26 items of spare parts for one 750 kW. M.E.R. geared condensing turbine (Frame C16).

The issuing authority is the Chief Controller of Stores, Pakistan Eastern Railway, Pahartali, Chittagong, to whom bids should be sent. The tender No. is P3/HA/29/61. The closing date is June 26, 1961. Local representation is considered desirable. The Board of Trade reference is ESB/17422/61.

From South Africa :

42,600 ft. asbestos cloth blue, 40 in.-42 in. wide.

16,000 lb. asbestos fibre blue (new)

630 (unit not known) asbestos hand sewing twine, reinforced with wire core.

The issuing authority is the Stores Department, South African Railways. Bids in sealed envelopes, endorsed "Tender No. K.8675 : Asbestos Cloth and Twine," should be addressed to the Chairman, Tender Board, P.O. Box 7784, Johannesburg. Local representation is essential. The closing date is June 16, 1961. The Board of Trade reference is ESB/15894/61.

Aluminium alloy flat sheets to B.S.S. 1490—NS3½H

2,500 8 ft. 10⅞ in. x 4 ft. 11½ in. x 16 S.W.G.

1,000 8 ft. 10⅞ in. x 3 ft. 11½ in. x 16 S.W.G.

500 8 ft. 10⅞ in. x 2 ft. 8¼ in. x 16 S.W.G.

1,000 8 ft. 10⅞ in. x 2 ft. 6¾ in. x 16 S.W.G.

Aluminium alloy flat sheets to B.S.S. 1470, NS4½H. 2,000 4 ft. 5¾ in. x 2 ft. 2½ in. x 10 S.W.G.

The issuing authority is the Stores Department South African Railways. Bids in sealed envelopes, endorsed "Tender No. D8671: Aluminium Sheets" should be addressed to Chairman of the Tender Board, P.O. Box 7784, Johannesburg. Local representation is essential. The closing date is June 23, 1961. The Board of Trade reference is ESB/170461/61.

Chain, short link, mild steel, electrically welded to specification B.S. 590/1949. Alternatively chain to specification S.A.B.S. 251/1951, provided the chain is heat-treated in conformity with Clause 6 of B.S. 590/1949 and the "up-bending" test Clause 17 is also applied.

1,000 lb. ⅛ in. dia.
55,500 lb. ¼ in. dia.
4,700 lb. ½ in. dia.
9,500 lb. ⅝ in. dia.
14,000 lb. ¾ in. dia.
3,500 lb. ⅞ in. dia.
24,000 lb. 1⅛ in. dia.

Chain, mild steel, long straight link, electrically welded to specification S.A.B.S. 251/1951, except for dimensions, which shall conform to drawing C.M.E. 101/12-440A.

25,100 lb. ⅞ in. x ⅜ in. x 3/16 in.

The issuing authority is the Stores Department, South African Railways. Bids in sealed envelopes, endorsed "Tender No. D8686: Chain" should be addressed to Chairman of the Tender Board, P.O. Box 7784, Johannesburg. Local representation is essential. The closing date is June 23, 1961. The Board of Trade reference is ESB/17047/61.

From Western Australia:

7 items including rubber bushes, rubber diaphragms, rubber rolling rings, rubber joint rings, hospepipes, rubber washers flat and rubber washers insertion.

The issuing authority is the Western Australian Government Railways Commission. Bids should be sent to: Western Australian Government Tender Board, 74 Murray Street, Perth. The tender No. is 319A, 1961. The closing date is June 29, 1961. The Board of Trade reference is ESB/17412/61.

From Sudan :

16,000 tons 75 lb. per yd. new, perfect, flat bottom steel rails, made in 36-ft. lengths to Sudan Railways drawing No. D.132.

The issuing authority is the office of the Controller of Stores, Sudan Railways, Stores Department, Atbara, to which bids should be sent. The tender No. is 2388. The closing date is June 26, 1961. The Board of Trade reference is ESB/96531/61.

Further details relating to the above tenders together with photo-copies of tender documents, unless otherwise stated, can be obtained from the Branch (Lacon House, Theobald's Road, W.C.1).

NOTES AND NEWS

Electric tramway closure. The Eastern Region of British Railways has announced that the tramway service between Grimsby and Immingham will be withdrawn on July 3. Passengers will be catered for by bus.

Australian traffic returns. Traffic returns of the Midland Railway of Western Australia for March stand at £A99,061, an increase of £A11,748. This brings the total for nine months' working to £A794,744, an increase of £A75,406.

C.P.R. earnings. Net earnings of the Canadian Pacific Railway in April were $1,311,914, revenue being $37,258,318. The net earnings for the year to date are $6,349,815, against $8,686,798 for the corresponding period last year.

Wimbledon District service. A new timetable for the Wimbledon service of the District line will be brought in on June 12. In the new timetable alternate Edgware Road–Wimbledon Line trains in the peak hours will terminate at Putney Bridge, while the frequency of the City trains to and from Wimbledon will not be altered. The peak service south of Putney Bridge will become 12 instead of 16 trains an hour.

Curtiss-Wright/Ardleigh Engineering agreement. Ardleigh Engineering Limited of Colchester has announced the signing of agreements with the Curtiss-Wright Corpora-

tion of New Jersey, U.S.A. which give Ardleigh the right to manufacture under licence the model E.H.P. hydraulic speed governor being produced by Curtiss-Wright Europa N.V. at Leiden, Holland. Under the agreements the Leiden factory will operate under the name of Regulateurs Europa N.V. as Ardleigh's subsidiary company and will continue to make and sell the E.H.P. governor as before. The new company will assume responsibility for the service of the governors which have already been delivered.

Technical evaluation agreement. Ardleigh Engineering Limited and the Curtiss-Wright Corporation have also entered into a technical evaluation agreement which gives each the right to manufacture or distribute each other's complete governor product lines in specified territories. The governor product lines of the companies are complementary.

London Midland Region and Commonwealth Training Week. The London Midland

Mr. David Blee and Mr. H. Aidley reading recruitment publications

Region of British Railways participated in the Commonwealth Technical Training Week exhibition at St. Pancras Town Hall and the illustration above shows Mr. David Blee, General Manager, London Midland Region, and Mr. H. Aidley, Chief Establishment & Staff Officer, examining the recruitment publications at the Region's stand.

Scottish Region posters. Illustrated on this page is one of a new series of holiday posters issued by the Scottish Region of British Railways.

Wagons-Lits finance. To assist in financing its new building programme, arrangements have been made by Wagons-Lits to issue a Fls. 12½ million 4¾ per cent 15 year debenture. This will be issued at 98½ per cent. Lists will open on June 9.

Higher provincial bus fares. Speaking at the annual meeting of the B.E.T. Omnibus Services Limited, the Chairman, Mr. John Spencer Wills said that applications for higher fares would have to be made.

Holiday poster issued by the Scottish Region of British Railways

North British Locomotive Co. Ltd. The North British Locomotive Co. Ltd. reduced its group net loss from £1,349,566 for 1959 to £467,682 for 1960. After adjustment for outside interests, a loss of £472,048 (£1,348,726) is attributable to the holding company. There is again no dividend on the ordinary or preference issues and the debit carried forward is increased from £1,207,382 to £1,676,206.

Weed Control symposium. Eight papers are to be read at the symposium to be held on June 30, referred to on page 578. These include "Weed Control on Railways, Docks & Harbours," by Mr. H. Hayhurst, British Transport Commission; "Chemicals and their Application," by Mr. John Cox, Fisons Pest Control; and "Weed Control on Industrial Sites," by Mr. Roy Jennings, Chipman Chemical Co. Ltd. Registration forms can be obtained from Mr. W. F. P. Bishop, 52 Bedford Row, London, W.C.1.

Fewer early morning trains. A number of early morning trains on the Southern's suburban network is being withdrawn this summer because of insufficient patronage. The reductions begin on June 12. The trains to be cut all arrive in London before or just a few minutes after 7.30 a.m.

West Highland Railway publicity. To publicise the summer activities of the West Highland Railway, the Scottish Region of British Railways has produced a poster (reproduced in this section last week) and two folders. One of these contains nine map diagrams of the route and mileages between Glasgow, Mallaig, and intervening points; the other, produced in full colour, carries a large panoramic representation of the area through which the line runs and a large illustration of the Ben Nevis locality.

I.E.E. summer meeting in London. One of the visits arranged for the members and ladies taking part in the Institution of Electrical Engineers' Summer Meeting in London was to the Hackbridge & Hewittic Electric Co. Ltd. at Walton-on-Thames, on June 1. The illustration below shows one of the parties in the works. Left to right are: Mr. C. J. Craddock-Jones, Mr. J. K. Smith, Mr. C. B. Cleland, Mr. D. B. Irving, Mr. A. W. A. Dillamore, Mr. G. O. Castell, Mr. A. M. Browne, and Mr. J. W. Kaney.

S.N.C.F. office at Paris-Orly air terminal. Among services provided for passengers in the new air terminal at the Paris airport, of Orly, is a French Railways office. This, which is managed by S.C.E.T.A., the S.N.C.F's road transport subsidiary, is open from 8 a.m. to 10 p.m.. It issues internal and international railway tickets, wagon-lits supplement tickets, reserves seats and sleeping accommodation in internal and international

Electrical engineers visiting Hackbridge & Hewittic Co. Ltd.

expresses, and arranges hire of self-drive hire cars from provincial French Railway stations where this service is provided.

Drayton Controls Limited. The Drayton Regulator & Instrument Co. Ltd. has announced that, on June 1, 1961 the name of the company was changed to Drayton Controls Limited. The telephone number remains West Drayton 4012, but the telegraphic address is altered to Draycon West Drayton Telex.

Welbury Freight Depot. Because of the loss being incurred, Welbury Freight Depot (between Northallerton and Eaglescliffe) is to be converted to a public delivery siding on June 12. This measure has been approved by the Transport Users' Consultative Committee for the North Eastern Area.

International Plastics Exhibition. This exhibition, which is stated to be the largest of its kind held in Europe, is being held at Olympia, London, June 21-July 1. Among the features will be displays of plastics fabricating, processing and ancillary equipment. Also on show will be the latest advances in moulding, extrusion, vacuum forming, and blow moulding.

Opposition to rail closure. Local authorities in Buckinghamshire plan to fight the proposed closure of the Bedford to Northampton branch railway line for passenger traffic. In a memorandum which British Railways has submitted to the Transport Users' Consultative Committee, East Midlands Area, it is stated that about £7,300 a year would be saved from withdrawal of the service.

New British standard. The British Standards Institution has issued a British standard entitled "Flexible load-bearing urethane-foam components 'polyether type' for vehicles" B.S. 3379. A similar standard is being prepared for the furniture industry. B.S. 3379 covers three classes of material sub-divided into nine hardness grades and lays down requirements for construction, surface condition, odour, colour, and tolerances on dimensions. Copies may be obtained from the British Standards Institution, price 6s. each.

Glasses for men on footplate. An agreement has been reached between the British Transport Commission, the N.U.R., and A.S.L.E.F., for certain drivers and firemen of electric and diesel locomotives to wear glasses. These will be permitted only when the duties of the men concerned can be confined to electric and diesel locomotives, diesel and electric multiple units, and steam locomotives engaged in shed and shunting work, including limited shunting movements over running lines. The agreement will be one of the first of its kind in the world of railway locomotion. The cost of two pairs of glasses for each man concerned will be borne by the Commission.

Railway Stock Market

After the sharp set-back in stock markets at the end of last week, steadier conditions developed, but the lower prices failed to attract any big buying wave, though there was some recovery in prices. Selling was on a much smaller scale, but an undertone of caution has persisted because of further warnings from company chairmen that higher costs and increased competition are narrowing profit margins. The talking point is whether export trade is likely to expand materially over the next few months. If not, it is feared the Chancellor may decide to use his "economic regulators" such as an increase in purchase tax, or a payroll tax with a view to damping down spending in the home market and switching labour and resources to exporting industries.

Foreign rails were scarcely affected by the surrounding trend of markets, and quotations were in most cases barely tested by dealings.

Costa Rica ordinary stock was 43½, with the first debentures 96½ and the second debentures 125. Chilean Northern 5 per cent first debentures were 50, and Guayaquil & Quito assented bonds 54½.

International of Central America common shares were $19½ and the preferred stock $100½. Paraguay Central prior debentures kept at 18, and Brazil Railway bonds at 4.

Elsewhere, Antofagasta ordinary stock remained at 15½, and the preference stock eased from 33½ to 31½xd. Activity increased in San Paulo Railway 3s. units, which strengthened from 1s. 7½d. to 1s. 9¾d. United of Havana second income stock was again 5¾.

Canadian Pacifics came back from $49 a week ago to $47½, but the preference stock was again 61, though the 4 per cent debentures lost a point at 56. White Pass shares at $12⅜ more than held the rise recorded a week ago.

Nyasaland Railways shares were again 11s. and the 3½ per cent first debentures 32. Midland of Western Australia £1 units of second debenture stock changed hands at 9s. 9d. West of India Portuguese capital stock was 116½ and Barsi Light Railway stock 17.

As was to be expected, locomotive building, engineering, and kindred shares reacted with the general market trend. Westinghouse Brake, for instance, were 43s. 3d. compared with 45s. 6d. a week ago. Beyer Peacock 5s. shares eased from 8s. 10½d. to to 8s. 7½d., but Charles Roberts 5s. shares remained at 8s. Wagon Repairs 5s. shares were firm at 21s. 9d. and Gloucester Wagon 10s. shares changed hands around 9s. 9d. North British Locomotive strengthened to 7s. but Birmingham Wagon declined from 32s. 9d. to 28s. 9d. Widely-held and active shares fell back sharply with the reaction in markets, though the lower prices brought in buyers later, but in general there were sharp declines as compared with a week ago. British Oxygen 5s. shares, for example, came back from 24s. 6d. to 22s. 6d., Tube Investments from 76s. to 71s. 3d. and T. W. Ward from 83s. to 81s. Pressed Steel 5s. shares declined on balance from 27s. to 26s. 3d. and Dowty Group 10s. shares from 39s. 4½d. to 37s. 1½d. Leyland Motors were 95s. 9d. compared with 98s. 4½d. a week ago.

Ransome & Marles 5s. shares eased from 20s. 3d. to 19s. 6d. and Pollard Bearing 4s. shares from 39s. 6d. to 38s. 6d. Vickers, moving with the surrounding trend, declined from 38s. to 37s., Guest Keen from 104s. 1½d. to 95s. 7½d., and Babcock & Wilcox from 32s. 6d. to 31s. 7½d. Despite the raising of the dividend from 15 per cent to 16 per cent, and the encouraging news from the chairman about the current order book, Stone-Platt shares came back from 60s. 6d. a week ago to 59s. 6d. G.E.C. were 35s. 3d. compared with 36s. 3d., A.E.I. 41s. 6d. compared with 42s. 6d., and English Electric 34s. 6d., a fall of 1s. 9d. on balance.

Forthcoming Meetings

June 15 (*Thu.*). The Model Railway Club at Keen House, Calshot Street, London, N.1, at 7.45 p.m. "The Southwold Railway: Part 2—The Model." A talk by Mr. E. R. Boston.

June 15-24 (*Thu.-Sat.*). International Construction Equipment Exhibition, Crystal Palace, London.

June 17 (*Sat.*). Stephenson Locomotive Society. R.C.T.S. North Derbyshire rail tour of goods lines in the Chesterfield area.

June 17 (*Sat.*). The Railway & Canal Historical Society, North Western Group, visit to Railway Museum, York.

June 18 (*Sun.*). Railway & Canal Historical Society, North Eastern Branch. Coach tour of Sheffield & Rotherham Railway, Greasborough Railway, Thorncliffe & Elsecar Railway, Worsborough Railway and Thurgoland branch.

June 22 (*Thu.*). The Permanent Way Institution, Nottingham & Derby Section. Evening coach tour of Charnwood Forest, and social evening.

June 26 (*Mon.*). Railway Benevolent Institution, Railway Clearing House, 163 Eversholt Street, N.W.1, at 4 p.m. Annual meeting of members.

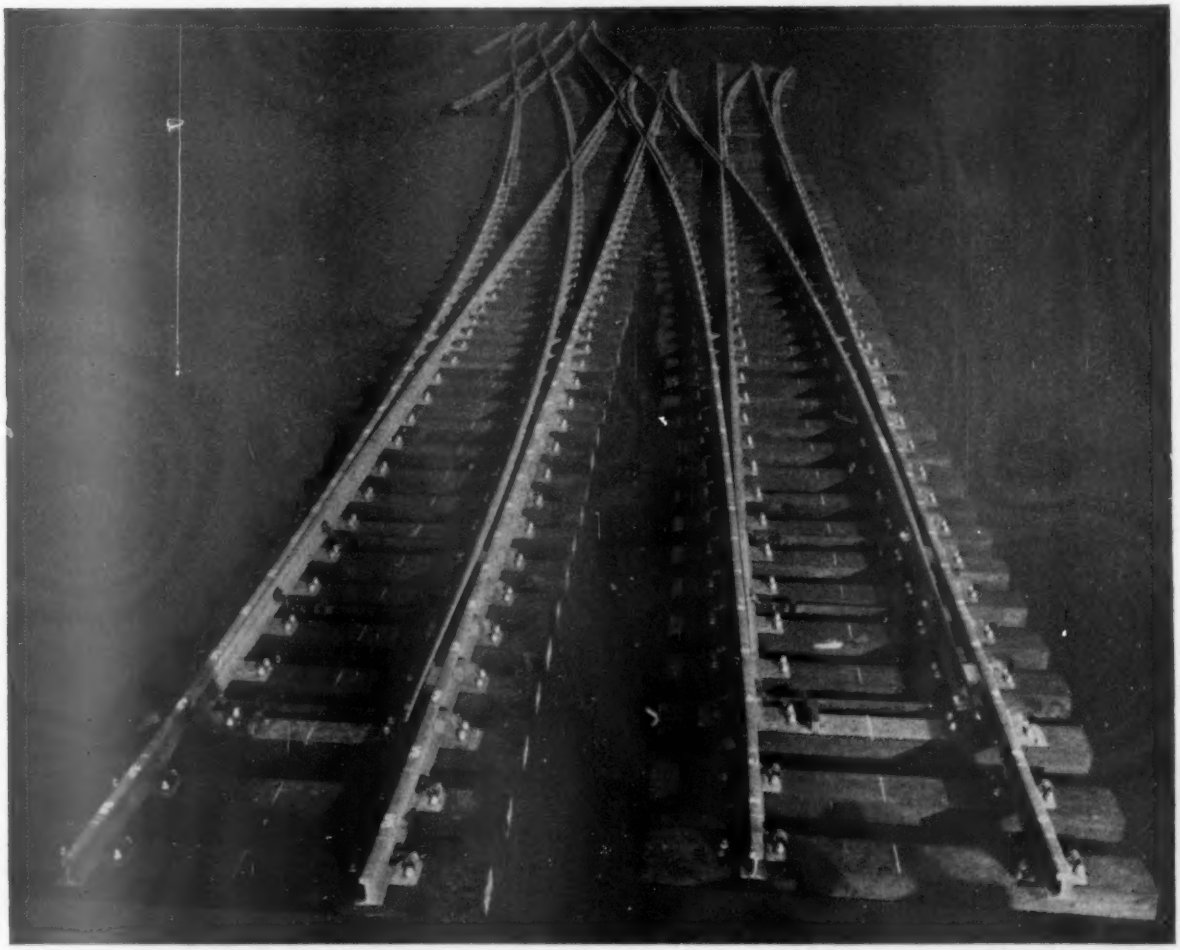
June 30-July 3 (*Fri.-Wed.*). Railway Students Association annual convention at Oriel College, Oxford.

July 1 (*Sat.*). The Permanent Way Institution, visit to Plymouth. Joint meeting with Exeter & West of England Section.

July 1 (*Sat.*). The Railway & Canal Historical Society, boat trip on the Staffordshire & Worcestershire Canal.

OFFICIAL NOTICES

SWITCHES and CROSSINGS



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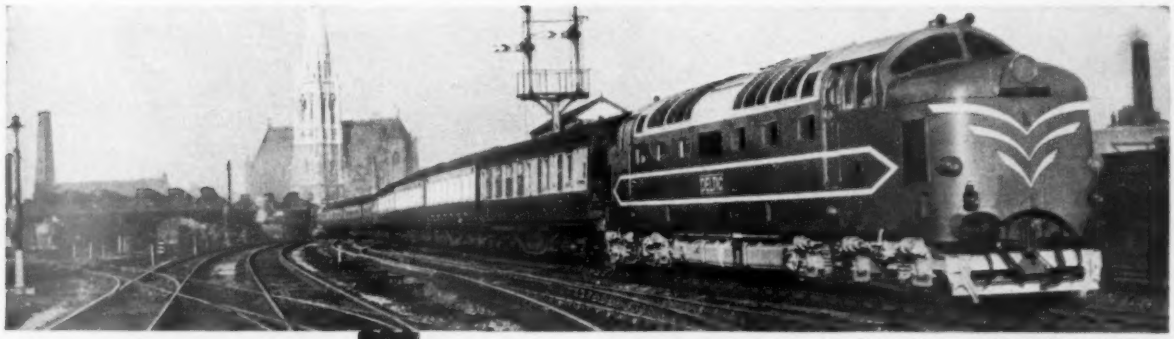
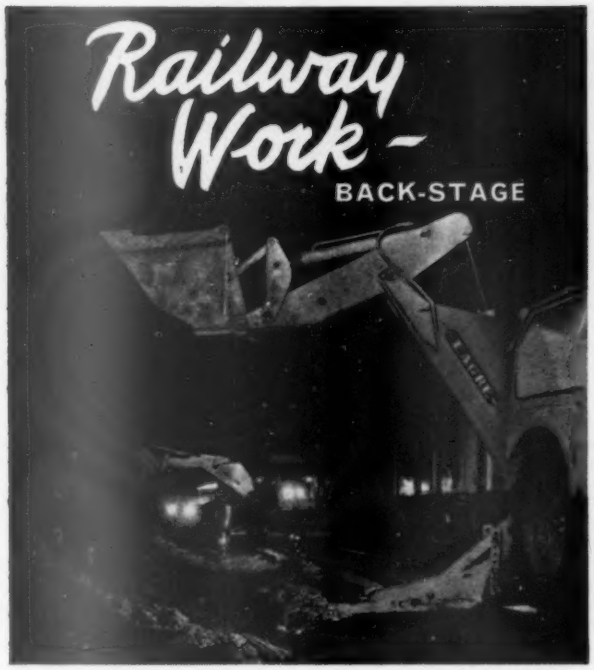


Photograph by courtesy of The English Electric Company



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Scene: Main Line, 2 a.m. —
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LONDON: Printed by ODHAMS PRESS LTD., Long Acre, W.C.2, and Published by TOTHILL PRESS LIMITED, Proprietors of THE RAILWAY GAZETTE, at 33, Tothill Street, Westminster, S.W.1. *June* 9, 1961

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